

ADMINISTRATIVE ACTION

CAPE FEAR CROSSING

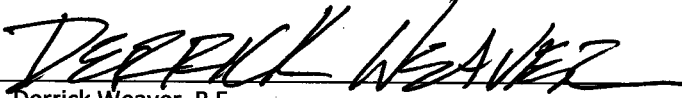
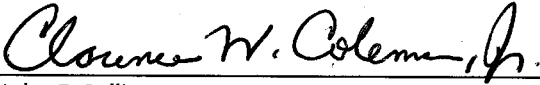
Brunswick and New Hanover Counties, North Carolina
Federal Aid Project No. STIPNHF-0017(150)
WBS Element 40114.1.2
STIP U-4738

DRAFT ENVIRONMENTAL IMPACT STATEMENT

U.S. Department of Transportation
Federal Highway Administration
and
North Carolina Department of Transportation

Submitted Pursuant to the National Environmental Policy Act 42 U.S.C. 4332(2)(c)

Cooperating Agency:
U.S. Army Corps of Engineers

3/25/19	
Date of Approval	Derrick Weaver, P.E. Environmental Policy Unit -Unit Head North Carolina Department of Transportation
3/25/19	
Date of Approval	for John F. Sullivan, III, P.E. Division Administrator Federal Highway Administration

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The documented needs for the transportation project in Brunswick and New Hanover Counties are presented in the report. The existing conditions of the study area are described and the alternatives are assessed in terms of environmental impacts, compatibility with local planning goals, relative cost-effectiveness and public opinion.

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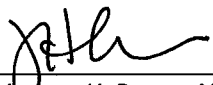
March 2019

Prepared by:

AECOM (URS Corporation – North Carolina)


3/25/19

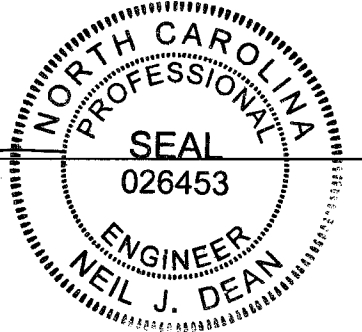
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Documentation Prepared For:

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3-25-2019

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PROJECT COMMITMENTS

- Coastal Area Management Act (CAMA) areas of environmental concern determinations and potential impacts will be established once the least environmentally damaging practicable alternative (LEDPA)/preferred alternative is selected and coordination with the North Carolina Division of Coastal Management has been completed.
- Impacts to navigable waters in the form of bridge piers will be determined once the LEDPA/preferred alternative is selected and bridge designs have been completed.
- The preliminary traffic noise analysis conducted for the proposed project found between three and eight locations (depending on the alternative) where noise barriers are likely. A more detailed review will be completed during project final design to determine whether these or other noise barriers are feasible and reasonable.
- The North Carolina Department of Transportation (NCDOT) will manage invasive plant species on the Department's right-of-way, as appropriate.
- NCDOT will follow FHWA's policy as set forth in FHWA Order 5520, *"Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events"* and guidance as set forth in FHWA's publications *"Highways in the River Environment-Floodplains, Extreme Events, Risk, and Resilience"* June 2016, (FHWA-HIF-16-018) and *"Highways in Coastal Environments: Assessing Extreme Events"* October 2014, (FHWA-NHI-14-006) to minimize climate and extreme weather risks and protect transportation infrastructure.

SUMMARY

Federal Highway Administration

Administrative Action: Draft Environmental Impact Statement (DEIS).

The content of this DEIS conforms to the requirements of the Council on Environmental Quality guidelines, which provide direction regarding implementation of the procedural provisions of the National Environmental Policy Act of 1969 (NEPA) and the Federal Highway Administration (FHWA) *Guidance for Preparing and Processing Environmental and Section 4(f) Documents* (US Department of Transportation [USDOT]/FHWA 1987).

NCDOT and FHWA are the lead agencies for the proposed project.

Contacts

The following individuals may be contacted for additional information regarding the DEIS:

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Overview

The process of completing a DEIS helps FHWA, NCDOT, and regulatory agencies make an informed decision on the selection of a preferred alternative. It assists them in developing alternatives that will

meet the objectives of the project, analyzing the pros and cons of each alternative, and selecting a preferred alternative. It is also a means of informing the public regarding how and why decisions were made.

For this project, the first step in the DEIS process was developing a purpose and need statement describing why the project is necessary and what objectives the project would meet or accomplish. During this process, NCDOT considered and evaluated alternatives developed in previous planning studies, as well as alternatives that were determined to be reasonable and met the purpose and need. In addition, a No-Build Alternative was included in the analysis as a baseline to measure the other alternatives against; the No-Build Alternative is considered a viable alternative throughout the DEIS process. The focus of the DEIS is providing an in-depth analysis of potential impacts from the project.

Within the framework of the DEIS development, the selection of the preferred alternative is often a complicated process. The preferred alternative must meet the purpose and need and comply with federal and state laws and regulations. These include the Threatened and Endangered Species Act, Clean Water Act, Clean Air Act, National Historic Preservation Act of 1966, Section 4(f) of the USDOT of 1966, and various other federal, state, and local laws and regulations, which are referenced throughout this document. Project decision makers, which include FHWA and NCDOT, also consider potential impacts to the social, physical, and natural environments and input received from regulatory agencies and the public.

The results of the alternatives analysis contained in this DEIS are being made available to regulatory agencies and the public for comments and feedback. No decision will be made on a preferred alternative until after the public hearing and comment period. All comments received will be considered in the selection of the preferred alternative.

The following summary provides a synopsis of the more detailed information presented in the body of the DEIS. At the end of this summary, Table S-1 presents a quantitative summary of the project impacts.

All technical studies for the project can be accessed via the project website at www.ncdot.gov/projects/cape-fear-crossing.

Purpose and Need

What is the Cape Fear Crossing project?

The Cape Fear Crossing project is a transportation project that would extend for approximately 9.5 miles from the vicinity of US 17 and I-140 in Brunswick County to US 421 in southern New Hanover County. The proposed project would involve either improving existing roads or constructing a new facility on new location or a combination of the two.

Why is the Cape Fear Crossing needed?

The Cape Fear Crossing is needed to improve traffic flow and enhance freight movements beginning in the vicinity of US 17 and I-140 in Brunswick County, across the Cape Fear River to US 421 near the Port of Wilmington in southern New Hanover County. Finally, the Cape Fear Crossing would help expedite an evacuation of residents and visitors in the event of a hurricane or other emergency.

What is the history of the Cape Fear Crossing?

Previously known as both the “Southern Bridge” (City of Wilmington and NCDOT 1999) and the “Cape Fear Skyway” (Wilmington Urban Area Metropolitan Planning Organization [WMPO] 2005a), the project has been included in a variety of Wilmington area plans and studies.

As the “Southern Bridge,” the project was originally proposed as a highway from Independence Boulevard and US 421 travelling west, across the Cape Fear River, turning north on Eagle Island, and terminating at an interchange with US 421 and US 74/76.

By 2005, the project was renamed the “Cape Fear Skyway,” and the *2030 Long Range Transportation Plan* (LRTP) proposed that the project shift to the south of Leland and Belville and terminate to the west as an interchange with US 17/US 74/76 and I-140 (WMPO 2005a). The WMPO listed the project as a priority project at that time.

In 2010, the 2035 LRTP listed the project as an unfunded priority project and added a toll component to help with funding (WMPO 2010).

By 2015, the 2040 LRTP lists the project as a partially funded priority project with a tolling component to aid in funding (WMPO 2015a). The 2040 LRTP also notes that the project has been approved for the North Carolina Turnpike Authority to develop, construct, operate, and maintain. The project is currently funded for planning and environmental studies only as part of the *2018-2027 State Transportation Improvement Program* (NCDOT 2017a).

How will traffic operate if the project is not built?

If the project is not built and traffic increases as projected, travel times will increase and the level of service (LOS) will decrease. The 2040 No-Build LOS on US 17 between West Gate Drive and US 74/76 ranges from LOS D to LOS F in the AM/PM peak hour. The 2040 No-Build LOS on the Cape Fear Memorial Bridge ranges from LOS E to LOS F. Traffic volumes at the Cape Fear Memorial Bridge are anticipated to increase by 60 percent by 2040 and travel times are projected to increase by 41 percent for the morning, eastbound rush hour and by 58 percent for the afternoon, westbound rush hour. In the 2040 No-Build conditions, 66 intersections exhibited poor LOS of LOS E or F in at least one peak hour.

The Port of Wilmington projects that port volume will increase from 260,000 twenty-foot equivalent units (TEUs, a measurement of capacity for container transportation) in 2013 to 421,000 TEUs by 2022. A 2013 analysis found that approximately 50 percent of Port of Wilmington traffic was truck traffic. Despite a separate, proposed project to widen South Front Street, congestion is still expected without

the Cape Fear Crossing project. This congestion is projected to negatively impact the Port of Wilmington's ability to continue to capitalize on port traffic expansion.

Current hurricane evacuation times are 29 hours for Brunswick and New Hanover counties, well above the statewide goal of 18 hours. Without the Cape Fear Crossing project, this evacuation time is expected to reach 40 hours by 2040.

What are the existing safety problems along the corridor?

The crash analysis found the number of roadway segments that exceed the statewide and critical crash rates, combined with the locations identified in the 2017 Highway Safety Improvement Program as meeting one or more safety warrants, suggests there may be safety deficiencies in the study area. Of the 15 roadway segments evaluated in the study area, 9 exceeded the statewide average crash rate and 8 exceeded the critical crash rate (NCDOT 2018a).

Alternatives

What alternatives are being considered for the Cape Fear Crossing?

NEPA requires that a full range of reasonable alternatives be considered for this project. Five types of alternatives were considered and were evaluated to determine whether they could meet the stated purpose and need. The No-Build Alternative assumes that the study area would evolve as currently planned without constructing the Cape Fear Crossing project. Transportation System Management Alternatives would coordinate the individual elements of the transportation system to achieve the maximum efficiency, productivity, and utility of the existing system while minimizing cost and inconvenience to motorists. It could include improving signal timing and coordination, minor realigning of intersections, and adding turning lanes. Travel Demand Management Alternatives would improve the efficiency of the transportation system by reducing travel demand rather than increasing the capacity of the roadway. Measures such as ridesharing, flexible work schedules, telecommuting, bicycling, and walking are often used. Mass Transit Alternatives would provide high-capacity, energy-efficient transportation through the use of bus or passenger rail facilities. Build alternatives would include construction of transportation facilities to improve the traffic operations of the transportation system. These could be located on existing roadway facilities or on new location.

What alternatives were examined and eliminated from further consideration?

The Transportation System Management, Travel Demand Management, and Mass Transit Alternatives were determined to not be reasonable because they would not meet the purpose of and need for the project. The No-Build Alternative must be carried forward under NEPA to allow for a basis of comparison with the detailed study alternatives.

What alternatives were selected for detailed study?

Following the evaluation of the preliminary alternatives, 12 build alternatives were selected as study alternatives. These alternatives include upgrades to existing facilities, alternatives on new location, and

a combination of upgrades to existing facilities and new location. Alternatives proposed on existing facilities included the option to be upgraded as an arterial widening or freeway. Following additional coordination with the NEPA/Section 404 Merger Team in 2017, six of these alternatives were eliminated in conjunction with this study. The current six detailed study alternatives include the following.

- **Alternative B:** Begins at I-140, crosses US 17, travels between Brunswick Forest and Mallory Creek developments, crosses Cape Fear River, and terminates at Shipyard Boulevard.
- **Alternatives M Avoidance and N Avoidance:** Begins at I-140/US 17 interchange, avoids Snee Farm/Stoney Creek developments, travels south of Brunswick Forest, crosses the Cape Fear River, and terminates at either Independence Boulevard (Alternative M Avoidance) or Shipyard Boulevard (Alternative N Avoidance).
- **Alternative Q:** Begins at the I-140/US 17 interchange, upgrades existing US 17 for approximately 2 miles, then continues on new location between the Brunswick Forest and Mallory Creek developments.
- **Alternative T:** Begins at the I-140/US 17 interchange, upgrades existing US 17 for approximately 2 miles, then continues on new location parallel to Wire Road and crosses the Cape Fear River to Shipyard Boulevard.
- **Alternative V-AW (Arterial Widening):** Begins at the I-140/US 17 interchange and includes upgrading US 17 to the US 17/US 421 interchange, then travels south along Eagle Island on new location, and crosses the Cape Fear River to terminate at US 421 and Shipyard Boulevard just north of the Port of Wilmington.

How would traffic operate for each of the alternatives once the Cape Fear Crossing is constructed?

The 2040 build conditions for all the detailed study alternatives show several improvements in the overall LOS within the project study area. All alternatives were found to have a LOS D or better in the 2040 build conditions.

How much would each alternative cost?

The cost for each of the alternatives includes the cost to purchase the right-of-way for the roadway, construct the roadway, and relocate utilities. The total cost for each alternative is as follows:

Alternative B:	\$995,110,000
Alternative M Avoidance:	\$906,640,000
Alternative N Avoidance:	\$961,470,000
Alternative Q:	\$867,680,000
Alternative T:	\$936,540,000
Alternative V-AW:	\$619,180,000

Affected Environment and Environmental Consequences

Community Effects

How would the project impact community facilities and services?

Alternative V-AW is expected to impact Greenfield Lake Park, Legion Sports Complex, and Optimist Park. Alternatives B, N Avoidance, and T are likely to impact E.P. Godwin Stadium. However, the direct impact to these parks is expected to be minimal and may include the loss of open space and/or parking, changes in access, or increased traffic noise.

Based on current designs, the Cape Fear Center for Inquiry would require relocation by Alternatives B, N Avoidance, and T. The school is located within the proposed right-of-way of the exit ramps at the proposed US 421 intersection in Wilmington.

Alternatives Q and M Avoidance would relocate two churches: Forward in Christ Freewill Holiness Church and Good Samaritan Church; both are located on Bryan Road in Wilmington. Alternative V-AW would relocate three churches: Church of St. Peter the Fisherman, New Life Christian Church, and The Lord's Church.

No daycare facilities, cemeteries, public housing units, post offices, or hospitals would be directly affected by the proposed project.

The proposed project would likely have an overall positive effect on police, fire, and other safety operations in the project study area due to increased mobility and reduced congestion on US 17, the Cape Fear Memorial Bridge, and US 421.

Construction-related closures and detours may temporarily impact emergency response. Coordination with the Town of Belville, the Town of Leland, and the City of Wilmington police and fire departments will continue during construction to ensure minimal disruption of emergency services.

How would the project affect neighborhoods and community cohesion?

Surrounding the existing interchange at I-140 and US 17, residential areas would be impacted by Alternatives M Avoidance, N Avoidance, Q, T, and V-AW. Some interchange configurations at the terminus of these alternatives would require the acquisition of residential areas. This would directly impact community cohesion in the area. Other impacts to this area would include noise, changes in access to US 17, and temporary construction impacts. Alternative B would impact residential areas along Lanvale Road, within Brunswick Forest, along NC 133, and south of Shipyard Boulevard. Impacts to these areas could include noise impacts, access changes, and in some instances, residential relocations. Alternatives that terminate at US 117 (Shipyard Boulevard) and Independence Boulevard would displace residences and impact several residential areas through increased noise and changes in access, some of which contain low-income and minority populations and Section 4(f) resources.

How would the project affect concentrations of low income or minority populations?

Impacts to populations identified as minority and/or low-income are anticipated with this project. The benefits and burdens to low-income and minority populations in the project corridor will be determined through future public involvement. Any identified moderate to severe impacts may then be assessed to determine whether avoidance, minimization, or mitigation can be proposed. Data from the 2011-2015 American Community Survey indicate there are 19 blocks that exceed the threshold for minority populations and/or low-income populations. These census blocks are generally located north of US 17 and NC 133, downtown Wilmington, south of US 76 to Shipyard Boulevard, and surrounding the area to the south of the Port of Wilmington. Impacts to these communities would range from loss of access to residential relocations.

Would the project be consistent with local and regional plans?

The Cape Fear Crossing project has been considered by local and regional plans since at least 1999 under various names. The WMPO has listed the project as a priority in the last three L RTPs.

How would the project affect bicycle and pedestrian transportation?

Due to the nature of the project, all alternatives would negatively affect pedestrian and bicycle transportation, especially within the City of Wilmington east of the Cape Fear River. Roads such as Independence Boulevard or Shipyard Boulevard would be converted into freeways by Alternatives B, M Avoidance, and N Avoidance and would lose current and future access by bicycles and pedestrians. Alternatives Q, T, and V-AW would limit future bicycle and pedestrian connections along each alternative's respective freeway sections and may impact bicycle and pedestrian connectivity along upgraded segments as well.

Would the project require relocating any houses, businesses, or cemeteries?

The project would require the relocation of houses and businesses under each detailed study alternative. The number of homes and businesses that would be affected varies by alternative and ranges from 26 residential relocations (Alternative Q) to 173 (Alternative T) and 45 business relocations (Alternative Q) to 117 (Alternative B). Minimal impacts to the Greenlawn Memorial Park cemetery along Shipyard Boulevard would be incurred by Alternatives B, N Avoidance, and T.

How would the existing business community be affected?

Existing businesses along existing US 17 may be affected as the detailed study alternatives divert traffic away onto new routes. Some businesses may experience localized impacts due to right-of-way acquisition and others may need to be relocated. Additionally, some businesses may be temporarily affected during construction due to traffic delays or detours.

Cultural Resource Effects

Would historic resources be affected?

The study area includes 10 historic resources that are either on the National Register of Historic Places (NRHP) or eligible for inclusion on the register. Based on consultation with the State Historic Preservation Office, the historic resources are evaluated in accordance with Section 106 of the National Historic Preservation Act and the effects on the property are determined based on the magnitude of the effect on the property. Three classifications are included in the evaluation: no effect, no adverse effect, and adverse effect. Alternatives M Avoidance and Q would have no effect on any of the identified historic resources. Alternatives B, N Avoidance, and T would have no effect on 7 of 10 identified historic resources and each would have no adverse effect on the remaining identified historic resource (Hanover Heights Historic District). Alternative V-AW would have no effect on 3 of 10 identified historic resources and no adverse effect on 4 of 10 identified historic resources. Alternative V-AW would have an adverse effect on the Wilmington Historic District, the Sunset Park Historic District, and the Jacob and Sarah Horowitz House.

Would archaeological resources be affected?

Five previously recorded sites lie within one or more of the detailed study alternatives. These sites include two in Brunswick County and three in New Hanover County. The two sites in Brunswick County have been recommended as ineligible for the NRHP. Two sites in New Hanover County have not been evaluated for NRHP eligibility and one site has been recommended ineligible for the NRHP.

Natural Environment Impacts

How would biotic resources be affected?

Biotic resources are the terrestrial and aquatic communities and wildlife within the study area. Fifteen terrestrial communities were identified within the study area for the proposed project: Maintained/Disturbed, Mesic Pine Flatwoods, Salt/Brackish Marsh, Pine Plantation, Wet Pine Flatwoods, Pocosin, Cypress/Gum Swamp – Blackwater Subtype, Nonriverine Wet Hardwood Forest, Coastal Plain Small Stream Swamp – Blackwater Subtype, Estuarine Woody Wetland, Cutover, Xeric Sandhill Scrub, Coastal Plain Bottomland Hardwood – Blackwater Subtype, Nonriverine Swamp Forest, and Small Depression Pocosin. Alternative M Avoidance would have the greatest impact to these communities and Alternative V-AW would have the least. Fragmentation and loss of wildlife habitat would be an unavoidable consequence of all the detailed study alternatives. Impacts to water resources in the project study area may result from activities associated with the construction of any of the detailed study alternatives. Temporary construction impacts due to erosion and sedimentation will be minimized through implementation of a stringent erosion control schedule and the use of best management practices. Long-term impacts to streams would be limited to stream reaches within the road facility footprint only. Impacts to stream reaches adjacent to the facility footprint will be temporary and localized during construction. Long-term impacts to adjacent reaches resulting from construction are expected to be negligible.

How would water quality be affected?

The project is not expected to have a substantial impact on ground or surface water quality. The project is not expected to substantially impact aquifer recharge volumes.

What impacts would occur to waters under the jurisdiction of the US Army Corps of Engineers?

The US Army Corps of Engineers has jurisdiction over wetlands and streams within the study area, and any impacts to these resources will be mitigated. Alternative M Avoidance would have the most stream impacts at 8,779 linear feet and Alternative T would have the least at 1,667 linear feet. Alternative V-AW would have the greatest impact to wetlands and CAMA areas of environmental concern at 140 acres and 89 acres, while Alternative T would have the least at roughly 40 acres and 2 acres, respectively.

Would habitat used by threatened and endangered species be affected?

The US Fish and Wildlife Service (USFWS) identifies 14 federally protected species in Brunswick County and 15 federally protected species in New Hanover County as of April 25, 2018 (Brunswick County) and June 27, 2018 (New Hanover County). The National Oceanic and Atmospheric Administration Division of National Marine Fisheries identifies two federally protected species with habitat in the project study area. Of the 18 individual protected species between both counties, 10 received the biological conclusion of “No Effect.” One species, the American Alligator, was listed as protected due to its similarity in appearance with another protected species that was not listed for either county and no biological conclusion is required. Of the remaining seven species, all (except for Northern long-eared bat) received the biological conclusion of “May Affect – Not Likely to Adversely Affect.” The Northern long-eared bat received the biological conclusion of “May Affect – Likely to Adversely Affect,” although certain impacts may be allowable under a programmatic biological opinion from USFWS and affecting all NCDOT projects with a federal nexus.

Physical Environment Impacts

How would traffic noise levels change?

To identify noise-sensitive receptors potentially affected by noise, predicted noise levels for the detailed study alternatives in 2040 were calculated and compared to the existing noise levels and the noise levels predicted in 2040. The term “affected” is defined as the noise-sensitive receptors that are predicted to experience noise levels that approach or exceed the Noise Abatement Criteria (NAC) or that substantially exceed existing noise levels with the detailed study alternatives. The following include the number of receptors that are predicted to experience traffic noise levels that approach or exceed the NAC or that substantially exceed existing noise levels.

- Alternative B - 526 receptors
- Alternative MA - 390 receptors
- Alternative NA - 396 receptors
- Alternative Q - 433 receptors

- Alternative T - 453 receptors
- Alternative V-AW - 276 receptors

Would the project include noise abatement?

Because noise levels at locations along the study corridor were determined to approach or exceed the FHWA Noise Abatement Criteria (NAC) or substantially exceed existing noise levels, the feasibility and reasonableness of noise abatement measures was evaluated. A traffic noise evaluation was performed that identified between three and eight locations (depending on the alternative) where noise barriers preliminarily meet feasibility and reasonableness criteria found in the NCDOT Traffic Noise Policy.

How would the project affect air quality?

All areas within North Carolina are designated as attainment, non-attainment, or unclassifiable with respect to each of the six criteria pollutants under the National Ambient Air Quality Standards (NAAQS). Brunswick and New Hanover Counties are in attainment with the NAAQS. The proposed project would not have a negative effect on air quality of this attainment area.

How would the visual quality be changed?

Temporary visual impacts would affect properties adjacent to areas where construction, staging, and stockpiling operations occur. Upon project completion, the contractor would be required to remove all equipment and excess materials and reseed any disturbed areas. Visual quality would be enhanced or improved for those using the highway and degraded for those viewing the highway from surrounding communities. The proposed project would provide motorists opportunities for scenic views across agricultural fields, the Cape Fear River, and forested areas, which would be a positive effect. Additional lighting near the transportation nodes where there are interchanges could be noticeable in rural areas where it is currently absent.

How would the project affect hazardous material sites?

Based on preliminary evaluations of hazardous materials within the study area, 40 hazardous waste sites were located within the study area, including sites that may contain petroleum underground storage tanks (31 sites), petroleum storage facilities (3 sites), automotive repair facilities (3 sites), dry cleaning facilities (2 sites), and hazardous waste sites (1 site). Alternative Q had the fewest affected sites at zero and Alternative V-AW had the most affected sites at 25, including 1 site with an anticipated high severity.

How would the project affect floodplains?

Due to the linear nature of the project and the existing roadway configurations, no practicable alternative exists that would completely avoid impacts to floodplains and floodways. Impacts to floodplains and floodways will be minimized to the greatest extent possible. Alternative B would have the lowest impact on 100-year floodplains, while Alternative V-AW would have the highest impact.

How would the project affect traffic during construction?

Detours and road closures may be required in locations where the proposed project utilizes or crosses existing roadways. Maintenance of traffic and construction sequencing will be planned and scheduled to minimize traffic delays within the project limits. Temporary lane closures and detours may be required at times during construction. A traffic control plan will be prepared during the final design phase of the project, which will detail impacts to existing traffic patterns and road closures or realignments.

Indirect and Cumulative Effects

What indirect and cumulative effects could be expected within the study area as a result of the project?

This proposed project is expected to contribute to indirect and cumulative effects of future land use changes within the future land use study area. Travel time savings to varying degrees depending on alternative are also expected. Depending on the alternative, it would also change property access and create new land use and transportation nodes to varying degrees. Indirect impacts are anticipated for historic and cultural resources, public parks and recreation lands, voluntary agricultural districts, protected lands, environmental justice populations, primary fishery nursery areas, prime and unique farmland soils, and targeted local watersheds. Cumulative effects are expected for protected lands, environmental justice populations, prime and unique farmland soils, and water quality resources.

What cumulative effects could be expected along the entire Cape Fear Crossing corridor as a result of the proposed projects in the region?

In addition to the cumulative effects on the study area, the cumulative effects on the overall region were analyzed to determine the effects of the planned improvements in the region. The study concluded that on a regional basis the proposed Cape Fear Crossing would contribute to indirect and cumulative effects in the region.

Required Permits and Actions

What permits would be required for the Cape Fear Crossing project?

The project is anticipated to require the following permits:

- North Carolina Division of Water Resources: Section 401 Certification and Stormwater Certification
- US Army Corps of Engineers: Section 404 Permit and Section 10 Permit
- North Carolina Division of Coastal Management: CAMA Permit
- US Coast Guard: Section 9 Permit
- USFWS: Section 404 and Section 10 Permit Review and Section 7 Consultation for shortnose sturgeon, Atlantic sturgeon, loggerhead sea turtle, wood stork, red-cockaded woodpecker, and West Indian manatee

What are the unresolved issues for the Cape Fear Crossing project?

Several issues are not yet resolved and will be developed further as the project development process continues. The unresolved items include additional coordination, investigation, and documentation relating to historic resources; additional hazardous material investigations; coordination on threatened and endangered species; coordination with permitting and regulatory agencies; and additional coordination and evaluation of impacts to affected environmental justice populations. Once a preferred alternative is identified, additional coordination will take place regarding historic resources, hazardous material investigations, and environmental justice populations to further investigate ways to avoid, minimize, and mitigate impacts. This coordination will be ongoing and continue throughout the development of the project and into final design. Coordination will continue with permitting and regulatory agencies, and issues will be resolved prior to authorization of construction.

Section 4(f)

Would resources that are protected by Section 4(f) of the Department of Transportation Act of 1966 be used?

Section 4(f) provides protection to historic properties, public parks, and recreation areas. Alternative V-AW right-of-way would impact three public parks and five historic properties considered a Section 4(f) "use." Alternatives B, N Avoidance, and T may temporarily impact one park due to easements along Shipyard Boulevard and one historic property. *De minimis* impacts are impacts that would not result in an "adverse effect" on the protected resource. For the proposed project, the following protected properties are anticipated to be considered *de minimis* impacts: Sunset Park School – Alternative V-AW; Hanover Heights Historic District – Alternatives B, T, and N Avoidance; and Wilmington National Guard Armory – Alternative V-AW. Alternative M Avoidance and Q would not have a Section 4(f) use.

How do impacts to resources protected by Section 4(f) affect the selection of the preferred alternative?

Section 4(f) requires that FHWA and other DOT agencies cannot approve the use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless the following conditions apply:

- The Administration determines that the use of the property will have a *de minimis* impact.
OR
- There is no feasible and prudent avoidance alternative to the use of land, and the action includes all possible planning to minimize harm to the property resulting from such use.

Public and Agency Involvement

What are the opportunities for public involvement in the Cape Fear Crossing project?

There have been numerous opportunities for public involvement over the past decade that have provided important insight into the study area and the potential alternatives for the project. Two citizen informational workshops (CIW) were held in April 2006 and March 2011 to present information, answer

questions, and receive comments regarding the project. Each CIW consisted of two meetings, one in Brunswick County and one in New Hanover County.

Two small group meetings have been held. The first was held with representatives of the Snee Farm, Stoney Creek, and Planters Walk communities on June 26, 2006. Community leaders provided background information about the neighborhoods. The second small group meeting was held with representatives of the National Gypsum Company, Inc. on March 24, 2011, in Wilmington. Company representatives discussed plant operations, financials, and status. They provided positive feedback on the proposed project.

Newsletter No. 1 was mailed to the project mailing list in March 2011 to inform citizens of the upcoming CIWs held in Brunswick and New Hanover counties.

Newsletter No. 2 was mailed to the project mailing list in April 2014 to inform citizens of the detailed study alternatives.

Newsletter No. 3 was mailed in December 2018 to property owners within the project area to notify them of the elimination of six alternatives from further consideration, as well as a status update.

A public hearing will be held following the publication of this document, and the public is strongly encouraged to attend, ask questions, and provide comments on the detailed study alternatives presented.

How do I provide comments on the Cape Fear Crossing project?

Comments can be provided as either written or oral comments. Oral comments will be taken at the public hearing and through the project hotline. Written comments can be made in one of three ways: by e-mail to capefear@ncdot.gov, through the web site at www.ncdot.gov/projects/cape-fear-crossing, or through the mail to:

Jamille Robbins
Public Involvement, Community Studies & Visualization Group Leader
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, NC 27699-1598

What comments and concerns have been expressed by the public during previous public involvement efforts?

The major comments and concerns previously expressed by the public include the following:

- General support for the project.
- The project was not progressing to construction quickly enough.
- Opposition was from citizens who personally owned property close to the corridor presented in the 2003 feasibility study for the project. Most of these comments were received from those who live

near the eastern and western termini, and expressed concerns related to relocations, property values, traffic impacts on local streets, noise, and air pollution.

- Reassurance that there would be additional opportunities for public input prior to final decisions being made.
- Completion of other projects such as I-140 (Wilmington Bypass between US 74/76 and US 17) and US 17 widening between US 74/76 and the Cape Fear Memorial Bridge.
- Cost of the project and the amount of tolls.
- Opposition to the project in general.
- Support for the project due to congestion in area.
- Impacts to human environment – most notably around neighborhoods such as Brunswick Forest, Mallory Creek, Snee Farm, and Stoney Creek.
- Opposition to the project yet favors upgrading existing roads such as US 17.

What comments and concerns have been expressed by the environmental resource and regulatory agencies?

Coordination with environmental resource and regulatory agencies has occurred throughout the project development process. Currently, no major comments and concerns have been raised by the agencies.

Next Steps

When will a preferred alternative be selected and how will the decision be made?

Following the publication of this DEIS, NCDOT will conduct a public hearing and collect comments from the public and regulatory agencies. At the end of the comment period, NCDOT will hold an internal meeting to review the comments and determine whether any additional studies need to be completed. Following the evaluation, FHWA and NCDOT will meet with the Merger Team to recommend a preferred alternative based upon an analysis of the alternatives from technical studies and the DEIS, coordination with environmental and regulatory resource agencies, and public input. The Merger Team then concurs on whether or not the preferred alternative for the project should be identified as least environmentally damaging practicable alternative.

Will there be more information provided on the preferred alternative once it is identified?

Once a preferred alternative is identified for the project, any additional studies required for the project would be completed and a Final Environmental Impact Statement disclosing the impacts for the preferred alternative will be developed and presented to the public and agencies for comment.

When will construction on the Cape Fear Crossing begin?

NCDOT's *2018-2027 State Transportation Improvement Program* (STIP) shows construction for the project as unfunded; however, once a preferred alternative is identified, the project will be reevaluated for its ability to be funded in the next STIP. The designs of the preferred alternative will also be refined based upon updated traffic analyses and other various technical studies. Once funding for construction is secured, it will take an estimated five years to complete the project.

Quantitative Summary of Project Impacts

A summary of the impacts for the alternatives is presented in Table S-1.

Table S-1: Alternative Comparison Matrix

Resource	Alternatives					
	B	MA	NA	Q	T	V-AW
Project Features						
Length of Corridor (miles)	11.1	12.3	12.2	11.5	11.4	11.8
Construction Cost (millions \$)	743	808	770	776	719	508
ROW Cost (millions \$)	248	96	190	90	216	107
Number of Interchanges	5	4	4	4	4	6
Number of Railroad Crossings	2	1	2	1	2	2
Number of Major Power Easement Crossings	2	1	1	2	2	4
Socioeconomic Features						
Parks	1	0	1	0	1	3
Churches	3	4	4	3	3	3
Cemeteries	1	0	1	0	1	0
Schools	1	0	1	0	1	0
Fire Stations	0	1	0	1	0	0
Business Relocations	117	43	86	45	88	98
Residential Relocations	149	48	148	26	173	168
Total Relocations	266	91	234	71	261	266
Minority and/or Low-Income Populations Present	Yes	Yes	Yes	Yes	Yes	Yes
Physical Environment						
Potential Noise Impacts	526	390	396	433	453	276
Farmland soils (acres) ^b	454.0	553.5	469.6	416.8	346.5	151.6
Hazardous Materials Sites: High severity (#)	3	1	3	0	3	1
Hazardous Materials Sites: Low severity (#)	3	5	4	0	3	24

Table S-1: Alternative Comparison Matrix

Resource	Alternatives					
	B	MA	NA	Q	T	V-AW
Floodplains – 100-year (acres) ^c	14.3	35.7	34.0	31.7	28.8	214.4
Floodplains – 500-year (acres) ^c	5.5	7.3	6.6	5.6	8.2	15.1
Floodway	2.8	2.1	2.1	2.6	2.6	0.4
Preservation Areas (acres)	29.5	31.0	30.5	21.9	21.4	139.8
Cultural Resources and 4(f)/6(f)						
Archaeological Probability ^c	250.7	481.1	370.3	380.8	273.0	318.0
Historic Properties – Section 106 adverse effect	0	0	0	0	0	3
Section 4(f) Anticipated Use	0	0	0	0	0	3
Section 4(f) Anticipated <i>De Minimis</i> Use	1	0	1	0	1	5
Section 6(f) Properties Impacted	0	0	0	0	0	2
Natural Environment						
Biotic Resources (acres)						
Coastal Plain Bottomland Hardwood - Blackwater Subtype	1.1	1.4	0.3	2.4	1.3	1.1
Coastal Plain Small Stream Swamp - Blackwater Subtype	6.7	17.0	10.1	8.8	0.5	6.8
Cutover	9.5	13.7	13.7	8.3	0.6	0.6
Cypress/Gum Swamp - Blackwater Subtype	12.1	21.7	21.7	12.1	6.5	0.0
Estuarine Woody Wetland	0.0	0.0	0.0	0.0	0.0	35.6
Maintained/Disturbed	210.3	282.3	272.6	226.9	230.0	281.0
Mesic Pine Flatwoods	102.5	239.1	200.3	145.9	111.0	39.4
Nonriverine Swamp Forest	0.1	2.2	2.2	0.0	0.0	0.0
Nonriverine Wet Hardwood Forest	11.8	5.7	5.6	8.6	13.5	21.9
Pine Plantation	145.8	47.5	41.0	101.4	87.9	0.7

Table S-1: Alternative Comparison Matrix

Resource	Alternatives					
	B	MA	NA	Q	T	V-AW
Pocosin	49.1	1.6	1.6	6.2	6.4	0.6
Salt/Brackish Marsh	64.9	67.8	70.1	63.7	64.9	79.6
Small Depression Pocosin	0.1	0.6	0.4	0.2	0.2	0.0
Wet Pine Flatwoods	41.6	43.6	42.3	20.9	17.8	6.5
Xeric Sandhill Scrub	0.2	8.7	0.2	8.7	0.3	1.5
TOTAL	655.8	752.8	682.0	614.0	540.8	475.2
Forested Land (acres)	371	380	325	306	245	113
Stream Crossings (#)	8	22	17	14	8	11
Streams (linear feet) ^a	2,528	8,779	5,806	4,962	1,667	2,075
Surface Waters/Ponds (acres) ^a	<0.1	0.0	0.0	<0.1	<0.1	<0.1
Wetlands (acres) ^a	98.5	64.2	58.8	45.7	39.7	140.2
CAMA Wetlands (acres) ^a	1.8	2.3	2.3	1.8	1.8	89.1
Federally-Protected Species Habitat Present	Yes	Yes	Yes	Yes	Yes	Yes

^a Impacts calculated using slope stake limits plus a 40-foot buffer.

^b Farmland soil impacts include prime farmland, farmland of statewide importance, farmland of unique importance, and prime farmland if drained.

^c Impacts calculated using the 1,000-foot corridor limits.

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LIST OF ACRONYMS

AASHTO	American Association of State Highway and Transportation Officials
ACS	American Community Survey
ADT	Average Daily Traffic
AEC	Area of Environmental Concern
AFSA	Anadromous Fish Spawning Area
APE	Area of Potential Effect
BG	Block Group
BMP	Best Management Practice
CAMA	Coastal Area Management Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFPUA	Cape Fear Public Utility Authority
CFR	Code of Federal Regulations
CIA	Community Impact Assessment
CIW	Citizen Informational Workshop
CLOMR	Conditional Letter of Map Revision
CO	Carbon Monoxide
CP	Concurrence Point
CSXT	CSX Transportation
CT	Census Tract
CWA	Clean Water Act
dB	decibel
DCIA	Direct Community Impact Area
DEIS	Draft Environmental Impact Statement
DOD	Department of Defense
DOJ	United States Department of Justice
DSA	Demographic Study Area
EFH	Essential Fish Habitat

ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FLUSA	Future Land Use Study Area
FMP	Floodplain Mapping Program
FPPA	Farmland Protection Policy Act
GIS	Geographic Information System
HPO	Historic Preservation Office
HQW	High Quality Water
ITRE	Institute for Transportation Research and Education
LEDPA	Least Environmentally Damaging Practicable Alternative
LEP	Limited English Proficient
Leq	Equivalent Sound Level
LOMR	Letter of Map Revision
LOS	Level of Service
L RTP	Long Range Transportation Plan
LUSA	Land Use Scenario Assessment
LWCF	Land and Water Conservation Fund
MA	Alternative M Avoidance
MA-NLAA	May Affect-Not Likely to Adversely Affect
MHW	Mean High Water
MOA	Memorandum of Agreement
MOE	Measure of Effectiveness
mph	miles per hour
MSAT	Mobile Source Air Toxics
MTP	Metropolitan Transportation Plan
NA	Alternative N Avoidance
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NC OSBM	Office of State Budget and Management
NCAC	North Carolina Administrative Code
NCCLT	North Carolina Coastal Land Trust

NCDCM	North Carolina Division of Coastal Management
NCDEQ	North Carolina Department of Environmental Quality
NCDMF	North Carolina Division of Marine Fisheries
NCDOT	North Carolina Department of Transportation
NCDWR	North Carolina Division of Water Resources
NCNHP	North Carolina National Heritage Program
NCSPA	North Carolina State Ports Authority
NCTA	North Carolina Turnpike Authority
NCTN	North Carolina Transportation Network
NCWRC	North Carolina Wildlife Resources Commission
NEPA	National Environmental Policy Act
NGC	National Gypsum Company
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NHPNA	Natural Heritage Program Natural Area
NLEB	Northern Long-Eared Bat
NMFS	National Marine Fisheries Service
NO ₂	Nitrogen Dioxide
NOAA	National Oceanic and Atmospheric Administration
NO _x	Nitrogen Oxide
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRTR	Natural Resources Technical Report
O ₃	Ozone
ORW	Outstanding Resources Water
PBO	Programmatic Biological Opinion
PDA	Probable Development Area
PM	Particulate Matter
PNA	Primary Nursery Area
RCRA	Resource Conservation and Recovery Act
RCW	Red-Cockaded Woodpecker

SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SHC	Strategic Highway Corridor
SO ₂	Sulfur Dioxide
SPL	Sound Pressure Level
SR	Secondary Road
STC	Strategic Transportation Corridor
STI	Strategic Transportation Investments
STIP	State Transportation Improvement Program
STP-DA	Surface Transportation Direct Attributable
TAC	Transportation Advisory Committee
TDM	Transportation Demand Management
TEU	Twenty-Foot Equivalent Unit
TSM	Transportation System Management
U.S.C.	United States Code
U-AW	Alternative U-Arterial Widening
U-F	Alternative U-Freeway
US	United States
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank
U-V	Alternative V-Freeway
VAD	Voluntary Agricultural District
V-AW	Alternative V-Arterial Widening
VMT	Vehicle Miles Traveled
WMPO	Wilmington Metropolitan Planning Organization
WS	Water Supply

1 PURPOSE OF AND NEED FOR THE PROJECT

1.1 Proposed Action

The North Carolina Department of Transportation (NCDOT) proposes to construct a transportation project known as the Cape Fear Crossing (formerly the Cape Fear Skyway), which would extend from the vicinity of US 17 and I-140 in Brunswick County to US 421 in southern New Hanover County, including a crossing of the Cape Fear River. Figure 1-1 is a map of the project location and vicinity. The proposed project would involve either improving existing roads or constructing a new facility, depending on the alternative selected. Six alternatives are currently being considered for the project (see Section 2.3.5).

The proposed action is listed in the federally approved NCDOT *2018-2027 State Transportation Improvement Program* (STIP) as Project Number U-4738. The project is funded for planning and environmental studies only; right-of-way acquisition and construction are both unfunded in the 2018-2027 STIP (NCDOT 2017a).

1.1.1 Project Setting

Brunswick and New Hanover counties are in the Coastal Plain physiographic region of the state, which is characterized by gently rolling plains and swampy tidewater along the Atlantic Coast. The project study area includes several tributaries of Town Creek (Bishop Branch, Morgan Branch, and Goodland Branch), Mallory Creek, Little Mallory Creek, Jackeys Creek, and the Cape Fear River.

Most of the project study area is in a relatively undeveloped portion of Brunswick County, with the exception of the US 17 corridor between Lanvale Road and US 74/76; however, new residential and commercial development is underway, particularly near the western and southern portions of the project study area. The project study area extends into the City of Wilmington and terminates east of US 421. There are several low-density, single-family neighborhoods near the western portion of the project study area. The Spring Hill community, a predominantly African-American neighborhood, is located near US 17 and SR 1414 (Goodman Road). A large (5,000 to 6,000 acres) mixed-use development with approximately 12,000 home sites and 300 acres of commercial land is within the project study area in Brunswick County. This development, called Brunswick Forest, is roughly bounded by US 17, NC 133, and Town Creek. In addition, local planners indicated that property along NC 133 is experiencing rapid residential development. Much of the land along Town Creek is held in conservation by the North Carolina Coastal Land Trust (NCCLT).

US 117 (Shipyard Boulevard) is a commercial corridor that terminates in the Port of Wilmington. Independence Boulevard, north of Shipyard Boulevard, is a heavily traveled commercial street with many commercial centers, restaurants, and offices. South of Shipyard Boulevard, Independence Boulevard is more residential in nature.

The Port of Wilmington, operated by the North Carolina State Ports Authority (NCSPA), is located on the eastern bank of the Cape Fear River within the project study area. The Port is a designated foreign trade zone, and is one of the nation's strategic seaports. The project study area is shown on Figure 1-2 and additional information regarding the Port of Wilmington is included in Section 1.3.1.2.

1.1.2 History of Project

The proposed project has been included in various Wilmington area plans and studies for the past two decades. The first references to the proposed project, with its current eastern and western termini, were in the *Wilmington Urban Area Transportation Plan 1999-2025* (2025 Plan) (City of Wilmington and NCDOT 1999) and the *Greater Wilmington Urban Area Transportation Plan Technical Report* (NCDOT 2001). It was subsequently analyzed in a feasibility study prepared by NCDOT in 2003 and then included in the Wilmington Metropolitan Planning Organization's (WMPO) 2030, 2035, and 2040 long-range transportation plans (LRTP). The 2025 Plan indicated that a previous thoroughfare plan showed the project (called the "Southern Bridge") as a proposed freeway from Independence Boulevard at US 421 west across the Cape Fear River, and northward on Eagle Island to an interchange with US 74/76 at US 421 (NCDOT 1996). The recommendation in the 2025 Plan was to keep the eastern terminus of the project at Independence Boulevard, but to move the western terminus to south of Belville and Leland, ending at an interchange with existing US 17 and the Wilmington Bypass (I-140). Using updated Transportation Planning Modeling Software (TRANPLAN) it was determined this change in location would reduce traffic on the Cape Fear Memorial Bridge crossing the Cape Fear River.

The 2030 LRTP, adopted by the WMPO in 2005, listed the "Cape Fear Skyway" (no longer referred to as the "Southern Bridge") as a priority project.

The proposed project was initially funded in the 2006-2012 STIP for planning and environmental studies only as a North Carolina Turnpike Authority (NCTA) project. The project then went on hold in 2010 until the WMPO affirmed support in 2012 for the project by passing a resolution requesting NCDOT and the NCTA complete the environmental document. At this point, the name of the project became the Cape Fear Crossing. In April 2015, the WMPO passed another resolution committing "STP-DA funds in the amount of \$100,000 for the completion of the environmental document for the Crossing over the Cape Fear River."

The *Cape Fear Commutes: 2035 Transportation Plan* (2035 LRTP), an update to the previous LRTP, still listed the project as an unfunded priority project, with a tolling component to help fund the project. The project limits remained the same.

The most recent LRTP, the 2040 Metropolitan Transportation Plan (MTP), adopted in November 2015, lists the project as a partially funded priority project with a tolling component to supplement funding (WMPO 2015a). The 2040 MTP notes the proposed project has been listed as an approved project for the NCTA to develop, construct, operate, and maintain.

The prioritization of this project was reiterated when the WMPO Transportation Advisory Committee (TAC) passed a resolution to expedite the project in May 2017. As previously stated, the project is funded in the 2018-2027 STIP for planning and environmental studies only.

1.2 Purpose of Proposed Action

The purpose of the proposed action is to improve traffic flow and enhance freight movements beginning in the vicinity of US 17 and I-140 in Brunswick County, across the Cape Fear River to US 421 near the Port of Wilmington in southern New Hanover County.

1.3 Need for Proposed Action

1.3.1 Primary Needs

The proposed project is intended to address the following deficiencies in the existing transportation network:

- **Traffic capacity deficiencies:** Without improvements to the existing network, US 17, from south of the Wilmington Bypass interchange to Front Street in Wilmington (over a 10-mile long segment), will be over capacity and operating poorly in 2040, with travel times on the US 17 corridor increasing up to 58 percent from the current condition. From the west, this roadway, including the Cape Fear Memorial Bridge, serves as one of the main entry points into the City of Wilmington and the Port of Wilmington. The Cape Fear Memorial Bridge (built in 1969) was not designed to support the area's current and proposed future population. Inadequate shoulder widths, median widths, and lane widths hinder its traffic carrying capacity. The opening of the lift-span bridge creates additional delay to the Dawson Street/Wooster Street corridors and creates additional, periodic congestion on US 17. Future population growth and development in the area will likely increase travel demand.
- **North Carolina port access:** All the truck routes around the Port of Wilmington are expected to operate at a poor arterial level of service (LOS) in 2040 (NCDOT 2018b). Future growth projections suggest that congestion levels on the local transportation network could hamper the Port's growth plans and competitiveness. Deficiencies in the existing transportation network diminish the ability to efficiently distribute goods and services from the Port of Wilmington.

1.3.1.1 Traffic Forecast and Operations

Analysis Methodology

A traffic simulation analysis was conducted to evaluate existing and future travel conditions and to assess the effectiveness of the proposed project in improving traffic flow in the project study area (NCDOT 2015d).

The traffic forecasts used for the traffic simulation analysis were obtained from the *Traffic Forecast Technical Memorandum, NCDOT STIP Project U-4738 – Cape Fear Crossing* (NCDOT 2014). The traffic forecast included the 2013 No-Build Conditions, 2020 No-Build and Build Conditions, and 2040 No-Build and Build Conditions. The 2020 No-Build and Build Conditions assumed the I-140 Wilmington Bypass (R-2633A&B), the US 17/74/76 widening from NC 133 to US 421 (R-3601), and other intersection and access management improvements were in place. This interim year forecast was used to interpolate and/or extrapolate volumes as needed in the base year model since the 2013 base year forecast did not include I-140 as complete. If other intermediate years would need to be used for additional study, traffic volumes could be developed using straight-line interpolation. Once a preferred alternative has been identified, a new traffic forecast will be prepared, of which a new base year will be developed.

Since the 2020 interim year volumes were used to include the I-140 Wilmington Bypass in the 2013 No-Build conditions, only the 2013 and 2040 forecasts were utilized for the capacity analysis. The *Capacity Analysis Report* summarizes the capacity analysis findings for the proposed project (NCDOT 2018b).

2013 Traffic Volumes

The 2013 average daily traffic (ADT) volumes for roadways in the project study area are shown on Figure 1-3 to Figure 1-5 and in Table 1-1.

Table 1-1: 2013 ADT Volumes

Location	From	To	Volume (vehicles per day)	Truck Percentages
US 17	South of Zion Church Road	US 74/76	28,200–48,800	7%
US 17 Business/ US 74/76	US 74/76	NC 133 (River Road)	66,000	9%–10%
	NC 133	US 74/421	74,000	9%–10%
Cape Fear Memorial Bridge	--	--	49,800	10%
US 421	West US 76 (Wooster Street)	North Carolina Avenue	16,600–29,100	--
	Wellington Avenue	Oak Lane	23,900–32,300	9%–10%
US 117 (Shipyard Boulevard)	South College Road	SR 1100 (River Road)	2,300–24,000 ^a	5%–50% ^b
Independence Boulevard	Park Avenue	SR 1100 (River Road)	3,900–17,700	4%–6%

Source: NCDOT (2014).

^a The greatest volume of traffic in this segment occurs between Independence Boulevard and South 17th Street.

^b Lower truck traffic percentages occur between South College Road and US 421 (between 5 and 6 percent) and higher truck percentages between US 421 and River Road (between 23 and 50 percent).

No-Build Capacity Analysis Results

Ninety-one (91) elements for the 2013 No-Build Conditions and 107 elements for the 2040 No-Build Conditions were analyzed to evaluate current and future traffic operations of routes within the project study area. Elements include freeway basic segments, freeway weaving, freeway merges and diverges, and signalized and unsignalized intersections.

In the 2013 No-Build Conditions, 11 intersections exhibited poor LOS of LOS E or F in at least one peak hour. The 2040 No-Build Conditions assume the local transportation system would evolve as currently planned, but without implementation of the proposed project. The planned improvements, within the project study area of the proposed project, were identified by reviewing the 2040 MTP. In the 2040 No-Build Conditions, 66 intersections exhibited poor LOS of LOS E or F in at least one peak hour. Existing storage lengths at all intersections, based on available data and current conditions, are reported. Several intersections do not adequately handle the queues and need additional storage. Storage is the length of roadway in which vehicles can queue in a turning lane without upsetting, blocking, or spilling over into upstream facilities such as driveways, unsignalized intersections, or other signalized intersections.

2040 No-Build Traffic Projections

The *Traffic Forecast Technical Memorandum, NCDOT STIP Project U-4738 – Cape Fear Crossing* (NCDOT 2014) provided the 2040 ADT volumes listed in Table 1-2.

Table 1-2: 2040 No-Build ADT Volumes

Location	From	To	Volume (vehicles per day)	Percent Change from 2013 No- Build Conditions
US 17	South of Zion Church Road	US 74/76	47,200–77, 600	67% to 59%
US 17 Business/US 74/76	US 74/76	NC 133 (River Road)	97,100	47%
	NC 133	US 74/421	109,800	48%
Cape Fear Memorial Bridge	--	--	79,600	60%
US 421	West US 76 (Wooster Street)	North Carolina Avenue	19,500–22,400	17% to (–23%)
	Wellington Avenue	Oak Lane	31,700–44,700	33% to 38%
US 117 (Shipyard Boulevard)	South College Road	SR 1100 (River Road)	4,600–36,300 ^a	100% to 51%
Independence Boulevard	Park Avenue	SR 1100 (River Road)	6,800–27,500	74% to 55%

Source: NCDOT (2014).

^a The greatest volume of traffic in this segment occurs between Independence Boulevard and South 17th Street.

2040 No-Build Simulation Analysis

The study area is expected to see degradation in travel conditions in the 2040 No-Build Conditions in both the AM and PM peak periods. Without additional improvements the projected traffic volumes will oversaturate the study corridor. It is anticipated most of the corridor will experience excessive delay and queuing in the 2040 No-Build Conditions. The simulation results along the travel time study corridor for the 2040 No-Build Conditions are detailed in Table 1-3.

Table 1-3: Travel Time Study Corridor – 2040 No-Build Results

Segment	Peak Period	2040 No-Build Travel Time (mm:ss) ^a	2040 No-Build Average Speed (mph)	2013 No-Build Travel Time (mm:ss) ^a	2013 No-Build Speed (mph)	Distance (miles)	Travel Time Percent Change from 2013 No-Build Conditions
Eastbound							
Overall Study Corridor	AM	32:56	21.80	19:26	37.00	11.97	41%
	PM	26:20	27.26	16:52	42.60	11.97	36%
US 17 from NC 87 to US 74/76	AM	17:11	20.08	--	--	5.75	--
	PM	11:34	29.82	--	--	5.75	--
US 74/76 from US 17 to US 421	AM	09:31	24.21	--	--	3.84	--
	PM	05:50	39.49	--	--	3.84	--
US 421 from US 74/76 to Shipyard Boulevard	AM	06:14	22.86	--	--	2.38	--
	PM	08:56	15.95	--	--	2.38	--
Westbound							
Overall Study Corridor	AM	24:20	29.55	15:44	45.70	11.99	35%
	PM	36:55	19.48	15:31	46.40	11.99	58%
US 17 from NC 87 to US 74/76	AM	11:28	30.07	--	--	5.75	--
	PM	12:49	26.91	--	--	5.75	--
US 74/76 from US 17 to US 421	AM	05:12	44.49	--	--	3.86	--
	PM	10:24	22.25	--	--	3.86	--
US 421 from US 74/76 to Shipyard Boulevard	AM	07:40	18.61	--	--	2.38	--
	PM	13:41	10.41	--	--	2.38	--

Source: NCDOT (2015d), Table 3.

^amm:ss – minutes:seconds

1.3.1.2 North Carolina Port Access

The Port of Wilmington is North Carolina's largest port and one of ten ports on the east coast. A 2014 study by the Institute for Transportation Research and Education (ITRE) found that goods moving through the Port of Wilmington contribute approximately \$12.9 billion to the state's economy and directly or indirectly support over 73,000 jobs across North Carolina (NCSPA 2014, IMPLAN 2014). The Port of Wilmington is shown on Figure 1-6.

In 2013, the Port of Wilmington handled approximately 260,000 twenty-foot equivalent units (TEUs, a measure used for capacity in container transportation), 3 million tons of bulk, and 325,000 tons of break bulk commodities (NCSPA 2014). In 2013, the traffic forecast estimated approximately 50 percent of traffic from the Port is truck traffic (NCDOT 2014). By the year 2022, it is expected approximately 421,000 TEUs will be carried to and from the Port of Wilmington (NCDOT 2015d). As discussed in Section 1.3.1.1, all the truck routes around the Port of Wilmington are expected to operate at a poor LOS in 2040. Future growth projections suggest that congestion levels on the local transportation network could hamper the Port's growth plans and competitiveness. Deficiencies in the existing transportation network diminish the ability to efficiently distribute goods and services from the Port of Wilmington.

US 421 Truck (South Front Street) is the main access road for Port of Wilmington traffic. Even though there is a project programmed in the 2018-2027 STIP (Project U-5734) to expand South Front Street to four lanes, it is still expected that intersections on South Front Street will operate at a poor LOS (E or F) by 2040 if no other improvements beyond the U-5734 project are made to the area transportation network. Without improvements to the existing transportation/distribution network, the Port of Wilmington may not be able to capitalize on the opportunity for increased shipping and cargo volumes. The 2040 MTP reiterates this need for increased freight movement by identifying improvements to the US 74 corridor and CSX Transportation (CSXT) rail line and restoration of the rail line to Raleigh as key priorities moving forward.

1.3.2 Secondary Benefits

In addition to addressing the primary needs, the potential exists for the following other desirable outcomes as a result of the proposed action:

- Consistency with state and local visions, including the North Carolina Strategic Transportation Corridor (STC) Policy and WMPO's 2040 MTP
- Improved hurricane evacuation clearance time and emergency evacuation
- Improved safety

1.3.2.1 Consistency with State and Local Visions

A secondary benefit of the proposed project would be to meet the goals of the transportation visions in the North Carolina STC Policy and the WMPO's 2040 MTP. The proposed project was included as part of the *Strategic Highway Corridors (SHC) Vision Plan* (NCDOT 2004) for North Carolina. It was included as part of Corridor 06.D, which was 1 of 55 corridors included in the SHC Vision Plan. In 2013, the SHC was updated and resulted in the creation of the North Carolina Transportation Network (NCTN) and STC

Policy, adopted by the NCDOT Board of Transportation on March 4, 2015. The STC identifies a network of 25 critical multimodal transportation corridors that move most of North Carolina's freight and people, link critical centers of economic activity to international air and sea ports, and support interstate commerce (NCDOT 2015c). The US 17, US 74, and US 421 West corridors have also been identified as STCs.

The proposed project is also listed as a priority project in the 2040 MTP, which identifies the project in the fiscally-constrained freight/rail project list and the fiscally-constrained roadways project list. The 2040 MTP cites the project as an important intermodal connector for improving freight movements in the Wilmington area and accommodating anticipated growth at the Port of Wilmington.

1.3.2.2 Improved Hurricane Evacuation Clearance Time and Emergency Evacuation

An additional secondary benefit of the proposed project would be to reduce hurricane evacuation clearance times for residents and visitors and to aid in emergency evacuation from Duke Energy's Brunswick Nuclear Plant in Southport.

According to the North Carolina Division of Emergency Management, NC 133, US 74/76, US 17, and US 421 (along with other roadways in the area) are designated hurricane evacuation routes. The projected deficiencies in capacity on these routes and the predicted increase in hurricane evacuation clearance time for 2040 pose a threat to residents and visitors. Without improvements to the network, emergency evacuation would be hampered.

The State of North Carolina's statewide hurricane evacuation clearance time goal is 18 hours (North Carolina General Statutes § 136-102.7), which is applied to a Category 3 hurricane with 75 percent tourist occupancy. Clearance time begins when the first vehicle enters the road network and ends when the last vehicle leaving reaches a point of safety. In this case, I-95 (at I-40) is considered to be the inland point of safety.

A hurricane evacuation analysis (NCDOT 2016a) was prepared for the proposed project to evaluate clearance times for 2040 No-Build Conditions.

Existing Clearance Times

For Brunswick and New Hanover counties, existing clearance time for the Category 3 hurricane, 75 percent tourist occupancy scenario is approximately 29 hours. The controlling bottlenecks include I-40 northbound and US 74/76 westbound and a number of in-county local bottlenecks. Considerable queuing at the Cape Fear Memorial Bridge, College Road (all sections), and US 421 is also likely.

Future Clearance Times – No-Build Scenario

The model developed for the region for the year 2040 was run for the storm/tourist occupancy scenario assuming no Cape Fear Crossing improvements are made. With the expected large regional population growth over the next 25 years, anticipated clearance times increase by 11 hours to 40 hours. I-40 westbound and US 74/76 would be the most congested segments exiting the region. Roadway segments

such as the Cape Fear Memorial Bridge, US 74/76 from the bridge to I-140, and US 17 in Brunswick County from I-140 to NC 133 would also experience high levels of evacuation traffic and contribute to the lengthy clearance times.

1.3.3 Local Area Transportation Plans

Several local transportation plans relate to the project study area. These include highway plans, transit plans, bicycle/pedestrian plans, coastal management plans, and freight plans. The local plans will be considered throughout the design and development of the proposed project. The following plans are discussed in more detail in Chapter 3:

- *Brunswick County CAMA Core Land Use Plan*
- *Cape Fear Historic Byway Corridor Management Plan*
- *Cape Fear Transportation 2040: A Metropolitan Transportation Plan*
- *Carolina Beach Road Corridor Plan*
- *Comprehensive Bicycle Plan for Leland, NC*
- *Congestion Management Process*
- *Dawson & Wooster Corridor Plan*
- *Gary Shell Cross-City Trail Master Plan*
- *Leland CAMA Land Use Plan Update*
- *Move. Play. Connect. The Wilmington/New Hanover County Comprehensive Greenway Plan*
- *River Road Small Area Plan*
- *River to the Sea Bikeway Master Plan*
- *Strategic Plan of the North Carolina State Ports Authority*
- *The Belville Vision 2020 Plan*
- *Town of Leland Pedestrian Plan*
- *Transit Needs Study for the Wilmington Multi-Modal Transportation Center*
- *US 17/NC 133 Collector Street Plan*
- *Walk Wilmington: A Comprehensive Pedestrian Plan*
- *Wave Short Range Transit Plan*
- *Wilmington MPO Comprehensive Transportation Plan*
- *Wilmington Rail Realignment and Right of Way Use Alternatives Feasibility Study*
- *Wilmington—New Hanover County Joint Coastal Area Management Plan 2006 Update*

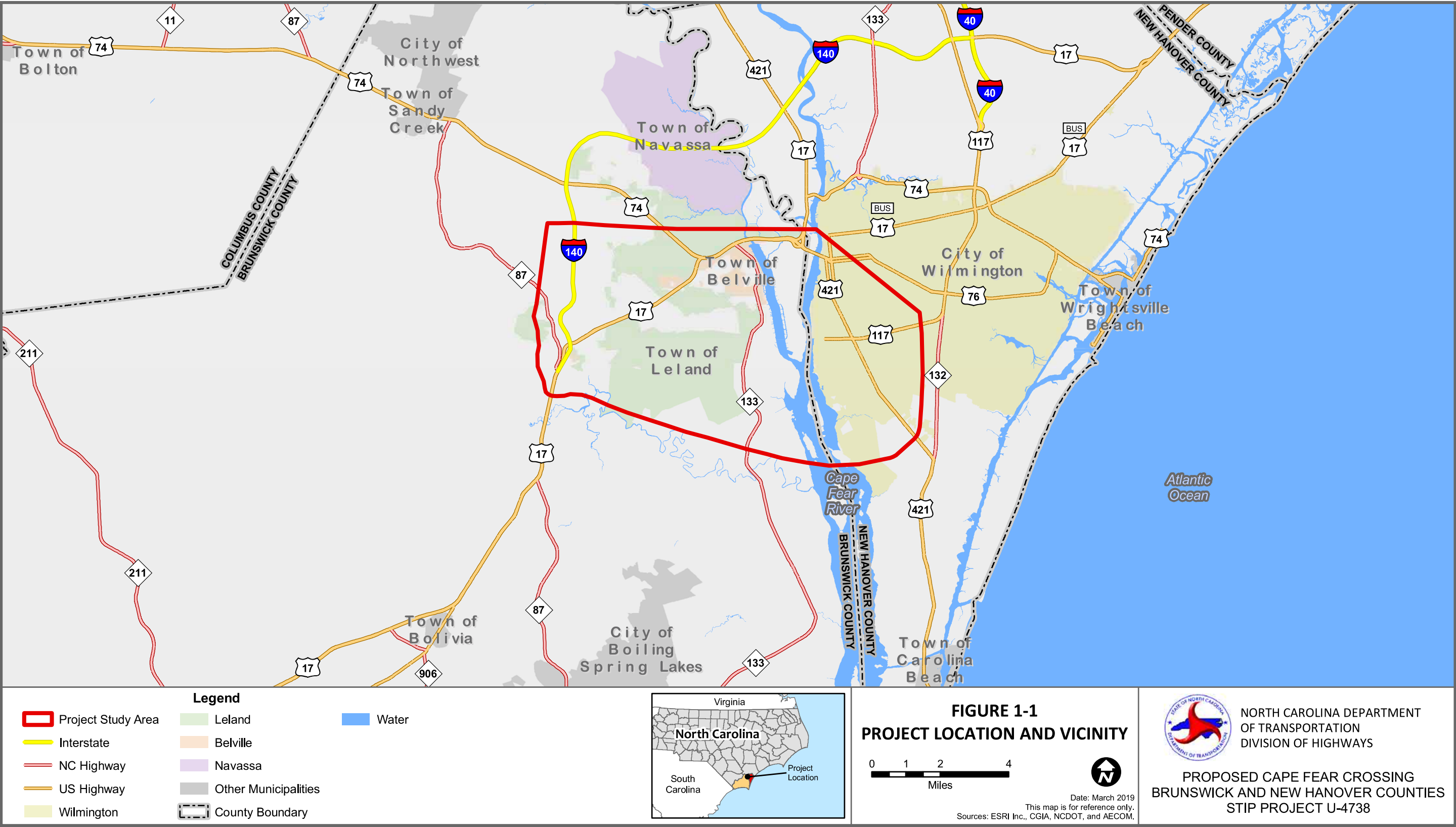


Figure 1-1: Project Location and Vicinity

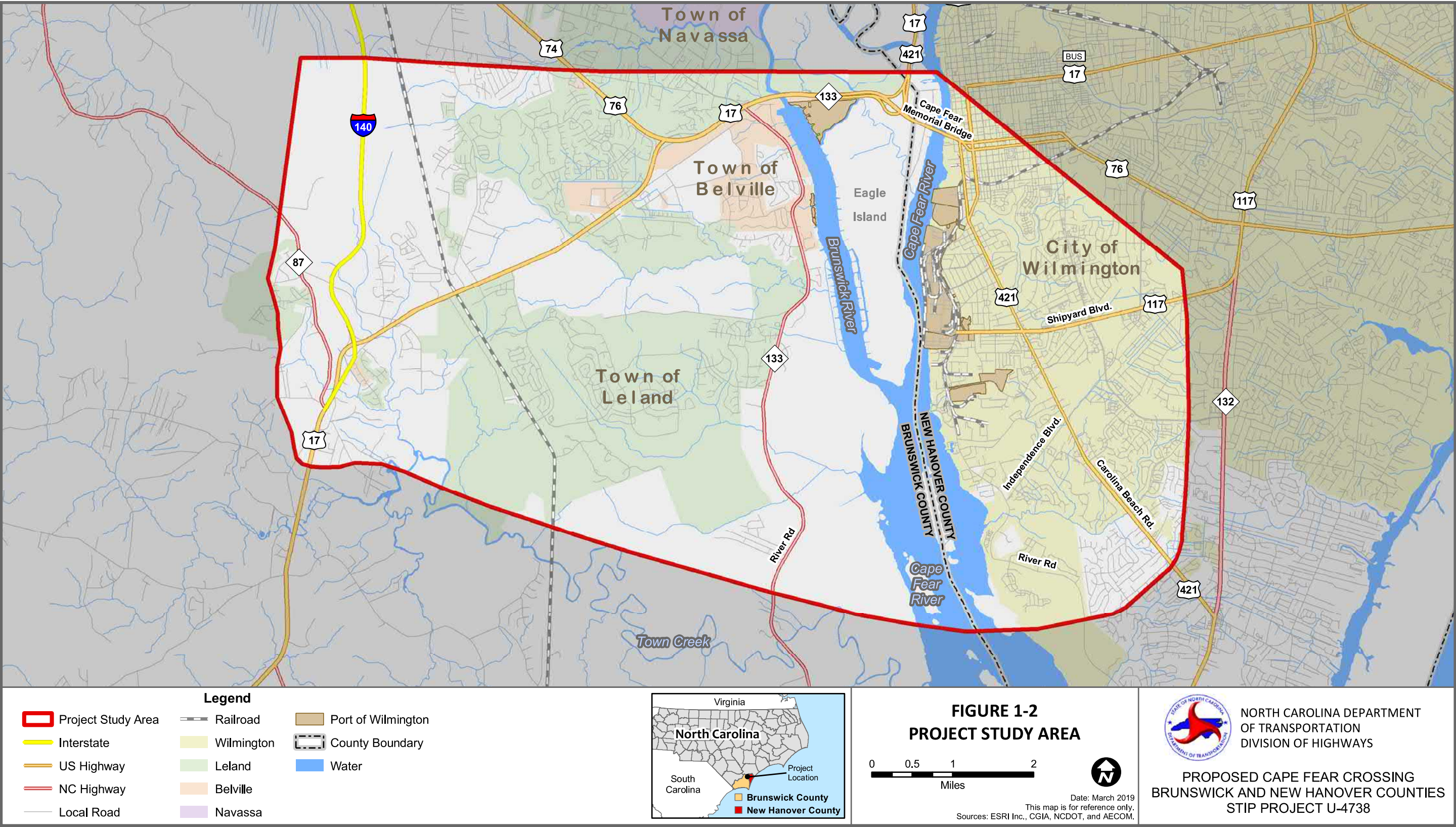


Figure 1-2: Project Study Area

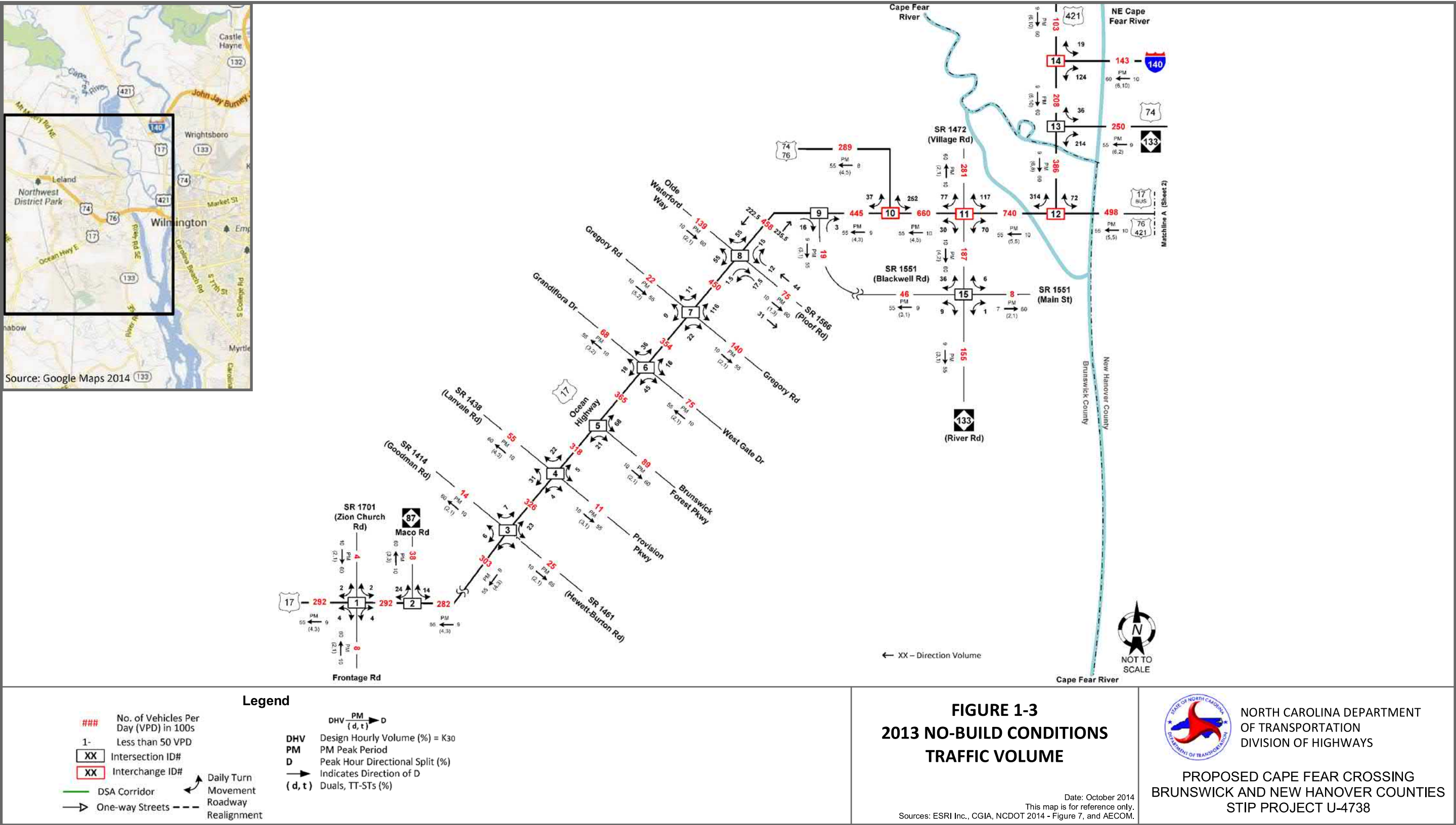


Figure 1-3: 2013 No Build Conditions Traffic Volume

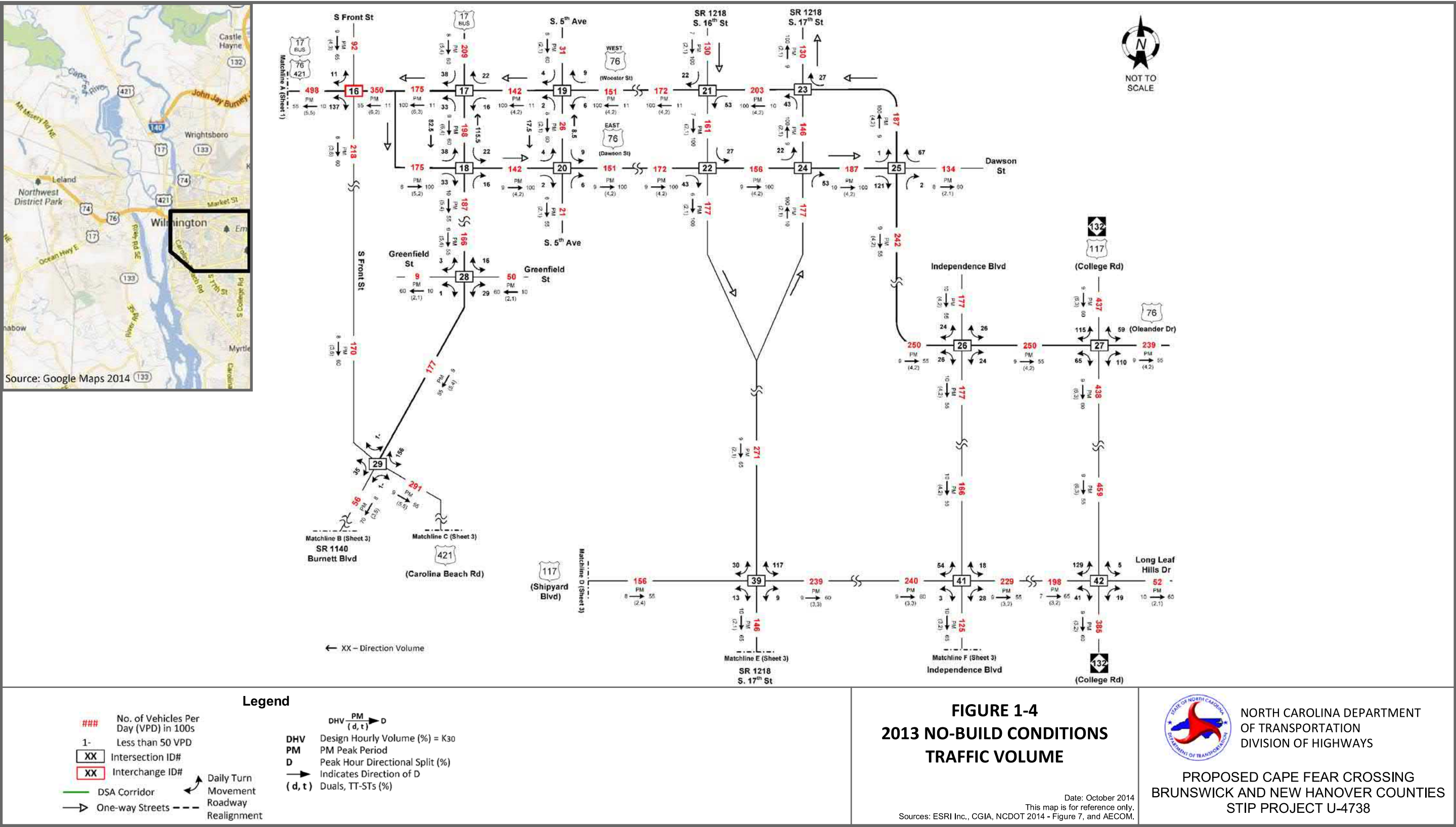


Figure 1-4: 2013 No Build Conditions Traffic Volume

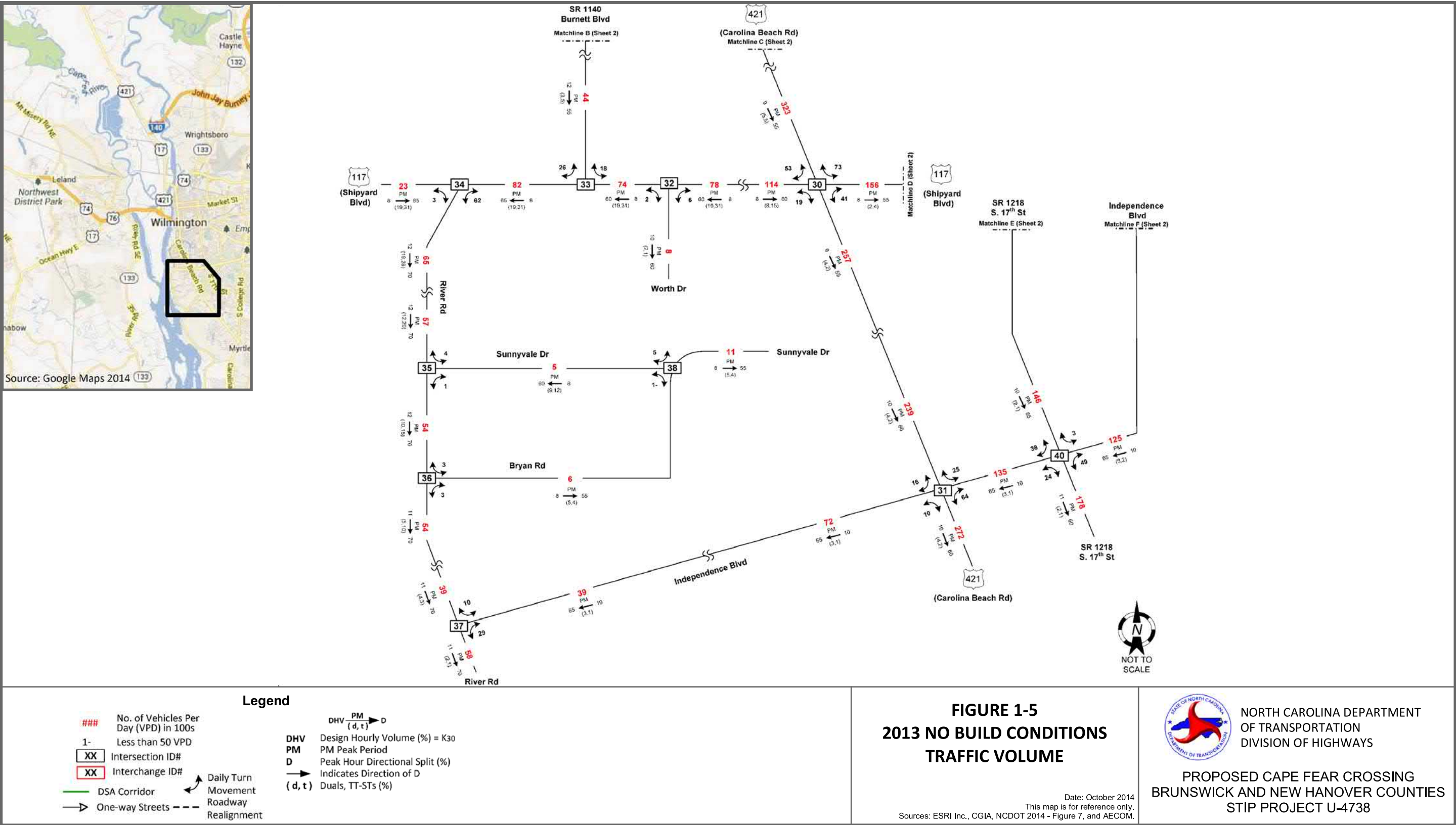


Figure 1-5: 2013 No Build Conditions Traffic Volume



Figure 1-6: Port of Wilmington

2 DESCRIPTION OF ALTERNATIVES CONSIDERED

The alternatives considered for the proposed project are described in this chapter. Each alternative considered is evaluated with respect to its ability to meet the purpose of and need for the proposed action. A number of preliminary alternatives were developed and evaluated during the early phases of the project studies, including the No-Build Alternative, transportation system management (TSM) alternatives, transportation demand management (TDM) alternatives, and build alternatives. A discussion of the alternatives considered for the proposed action, the process of elimination of those alternatives not determined reasonable, and the basis for the selection of the alternatives carried forward for detailed study are provided in this chapter.

2.1 Qualitative First Screening of Alternative Concepts

The qualitative first screening considered the preliminary study alternatives described in Sections 2.1.1 through 2.1.6 and screened them against the purpose of and need for the project. The preliminary study alternatives and purpose and need for the project were discussed with the Section 404/NEPA Merger Team in June 2013. Alternative concepts that do not have the potential to meet the project purpose and need were eliminated from further consideration. Alternatives with the potential to meet all elements of the purpose and need were carried forward to the quantitative second screening of alternatives.

2.1.1 No-Build (No Action) Alternative Concept

The No-Build Alternative assumes the local transportation system would evolve as currently planned, but without implementation of the proposed project. With the exception of routine maintenance, no change would take place along the existing corridors, such as I-140, US 17, and NC 133, within the project study area.

There are no right-of-way or construction costs associated with the No-Build Alternative. There would be no impacts to streams, wetlands, or other natural and cultural resources, and there would be no residential or business impacts. However, the No-Build Alternative would not meet any of the purposes identified for the proposed action, nor would it solve or alleviate any of the needs described in Chapter 1. Additionally, the No-Build Alternative is not consistent with the adopted local, regional, and state transportation plans.

In accordance with the National Environmental Policy Act (NEPA) (40 Code of Federal Regulations [CFR] 1502.14(d)) and Federal Highway Administration (FHWA) guidelines, the No-Build Alternative is given

full consideration and provides baseline conditions with which to compare the improvements and consequences associated with the alternatives carried forward for detailed study. The “No-Build” or “no project” alternative is always considered an option throughout the study. It cannot be ruled out until the various “build alternative” effects have been thoroughly studied, and all comments from government agencies and the public are fully considered and responded to. Consideration of the No-Build Alternative assumes that the transportation network in the project study area continues to develop as called for in the *Cape Fear Transportation 2040: A Metropolitan Transportation Plan (MTP)* (WMPO 2015a) but without the proposed project.

2.1.2 Transportation System Management Alternative Concept

The goal of TSM is to maximize the efficiency of the existing transportation system, improve air quality, and enhance safety and mobility of vehicles and goods. This is achieved by coordinating individual elements of the transportation system through regulatory and control policies. TSM alternatives typically consist of low-cost, minor transportation improvements to increase the capacity of an existing facility. There are two main types of TSM improvements: operational and physical (see examples in side box).

Many TSM improvements have already been incorporated into a portion of the existing US 17 corridor as a result of implementing the superstreet intersection configuration between Lanvale Road and US 74/76 in Brunswick County. The amount of traffic projected for 2040 along US 17 and US 17 Business would overwhelm the effectiveness of minor TSM improvements. The 2040 network speeds along the US 17 and US 421 corridors were increased by 5 miles per hour (mph) in the no-build scenario as a means to analyze the effectiveness of incorporating TSM measures such as signal timing, access control, and intersection improvements and to illustrate the potential improved capacity created. This resulted in LOS F on the Cape Fear Memorial Bridge and on multiple sections of existing US 17.

In general, TSM improvements are low-cost measures that are effective in solving localized or site-specific capacity, safety, and operational problems in urban areas. However, alone they would not decrease the volume-to-capacity ratio of the existing roadway enough to improve traffic flow to an acceptable LOS. Therefore, the TSM Alternative concept was eliminated from further consideration.

Examples of TSM Operational Improvements

- Traffic law enforcement
- Access control
- Signal coordination
- Turn prohibitions
- Speed restrictions
- Signal phasing or timing changes

Examples of TSM Physical Improvements

- Turn lanes
- Intersection realignment
- Improved warning and information signs
- New signals or stop signs
- Intersection geometric and signalization improvements

2.1.3 Transportation Demand Management Alternative Concept

TDM improvements include measures and activities that change traveler behavior. Typically, they do not involve major capital improvements. TDM addresses traffic congestion by reducing travel demand for

the existing transportation system rather than increasing transportation capacity. TDM alternatives include demand management strategies currently implemented in Brunswick and New Hanover counties, such as staggered work hours, flex-time (employer focused), telecommuting, and ridesharing.

The Cape Fear Public Transportation Authority, operating as Wave Transit or WAVE, provides a service known as the “Wave Pool,” which is a collaborative effort between the WMPO and the Cape Fear Public Transportation Authority. This program allows people who live and work near each other and have similar commuting schedules to share a ride to work. The two Wave Pool options are vanpool and carpool. The vanpool program provides a van to groups of five or more people, and the carpool program is used for groups that do not have enough members to qualify for a vanpool. WAVE has a ride matching system to find carpool candidates.

According to the 2011-2015 American Community Survey (ACS) 5-year estimates (US Census Bureau 2015), 4.8 percent and 6.8 percent of people work from home in Brunswick and New Hanover counties, respectively.

The TDM Alternative concept could result in a minor improvement to traffic flow by reducing the peak hour volumes along area roadways. Based on the 2010 US Census, vehicle occupancy in the Wilmington area averages approximately 1.1 persons per vehicle. A much higher participation rate, beyond that which can reasonably be expected by the Wave Transit “Wave Pool” program, would be required for ridesharing, vanpooling, staggered work hours, and other transportation demand measures to provide a noticeable improvement in traffic conditions in the project study area. In order to reach an acceptable LOS (LOS D), over 50 percent of the population would need to change their travel behavior by way of a TDM strategy such as ridesharing, telecommuting, or staggered work hours. Therefore, the TDM Alternative concept was eliminated from further consideration.

2.1.4 Mass Transit/Multi-Modal Alternatives Concept

The Mass Transit Alternative concept would include bus or rail passenger service. A major advantage of mass transit is that it can provide high-capacity, energy-efficient movement in densely traveled corridors. It also serves high-density areas by offering an option for automobile owners who do not wish to drive and service to those without access to an automobile. Existing mass transit alternatives include Wave Transit and the Brunswick Connector. The Brunswick Connector is a connector bus serving points between Leland, Navassa, Belville, and downtown Wilmington.

Forecasted 2040 traffic volumes are approximately 2,100 vehicles over the capacity required to meet LOS D. According to the 2011-2015 ACS, less than 1 percent of workers in Brunswick County and 1 percent of workers in New Hanover County use public transportation as their primary method of transportation to work. It is unreasonable to expect 2,100 vehicles to shift from vehicle use to mass transit or to add 21 light rail runs by the year 2040. Therefore, the Mass Transit/Multi-Modal Alternative concept was eliminated from further consideration.

2.1.5 TDM/TSM/Mass Transit Combination Alternative Concept

The TDM/TSM/Mass Transit Combination Alternative concept would include aspects of all three alternative concepts. In this combination concept, four different scenarios were evaluated that included TSM measures with varying degrees of TDM concepts and mass transit. The traffic volumes for the TSM only alternative concept were used as a baseline. In each scenario, TSM measures were in place along US 17 and US 421 where applicable and it was assumed various percentages of drivers (10, 15, 25, and 50 percent) that exceeded the capacity required for LOS D on the existing Cape Fear Memorial Bridge would change their behavior via TDM measures. Furthermore, various buses and light rail runs would be required during the peak hour to meet an acceptable LOS (LOS D) in 2040.

Through examination of the four scenarios, it was determined to be unlikely that any of the scenarios would be reasonable due to the unlikelihood of travelers to change their behavior or use mass transit to that degree. Based on US Census data and the lack of evidence to suggest that substantially larger percentages of area workers would take advantage of TDM strategies, the TDM/TSM/Mass Transit Combination Alternative concept was eliminated from further consideration.

2.1.6 Build Alternative Concepts

2.1.6.1 Upgrade Existing US 17 (Standard Arterial Widening) Alternative

The Upgrade Existing US 17 (Standard Arterial Widening) Alternative concept would upgrade existing US 17 from south of Zion Church Road to the US 74/76 interchange with US 17, given that the remaining portion of US 17 and US 17 Business from US 74/76 through the Cape Fear Memorial Bridge is already classified as a freeway and would continue to operate as such. Implementation of this alternative would use the existing superstreet intersections, include an evaluation of the need for additional superstreet intersections and their effectiveness, and include the addition of through travel lanes to the existing four-lane divided facility. This alternative would include the construction of a fixed-span bridge with additional capacity at the location of the existing Cape Fear Memorial Bridge.

The Upgrade Existing US 17 (Standard Arterial Widening) Alternative concept would improve traffic flow by providing additional capacity along US 17 and US 17 Business; however, traffic signals would continue to be used, which would result in stop delay and result in multiple corridors and intersections operating at LOS of E or worse. However, this alternative concept would improve traffic flow across the Cape Fear River from LOS F (2040 No-Build Conditions) to LOS D or better in 2040. This alternative concept would also include improvements to existing US 421 within the City of Wilmington, further improving a route for trucks traveling to the Port of Wilmington.

This alternative would improve traffic flow in the project study area and would improve truck access to the Port through the addition of travel lanes to the existing four-lane divided facility. Therefore, this alternative was retained for further analysis and screening.

2.1.6.2 Upgrade Existing US 17 (Freeway) Alternative

The Upgrade Existing US 17 (Freeway) Alternative would control access to US 17 by improving existing US 17 to a freeway facility from south of Zion Church Road to the US 74/76 interchange with US 17. To accommodate this, constructing the project along an existing roadway corridor would require frontage roads to provide access to properties that previously had direct access to US 17. The remaining portion of US 17 and US 17 Business from US 74/76 through the Cape Fear Memorial Bridge is already classified as a freeway and would be modified to improve traffic operations. This alternative would include the construction of a fixed-span bridge with additional capacity at the location of the existing Cape Fear Memorial Bridge.

The Upgrade Existing US 17 (Freeway) Alternative concept would improve traffic flow by providing additional capacity along US 17 and US 17 Business, as well as by eliminating at-grade intersections and controlling access to the facility. It would also include improvements to existing US 421 within the City of Wilmington, further improving a route for trucks traveling to the Port of Wilmington. Therefore, this alternative was retained for further analysis and screening.

2.1.6.3 New Location Alternative

A New Location Alternative concept would involve construction of a roadway on new location from US 17 in Brunswick County to US 421 in New Hanover County, including a crossing of the Cape Fear River. The first screening did not differentiate between alternative corridor locations.

The facility type for this alternative concept would be a freeway with full control of access, as the highest level facility warranted by traffic projections should be considered when the alignment is on new location.

The New Location Alternative concepts would improve traffic flow by providing additional capacity with a new location roadway. This new capacity would also improve traffic flow on existing roadway facilities within the region such as US 17, I-140, NC 133, and US 421. It would also include improvements to existing US 421 within the City of Wilmington, further improving a route for trucks traveling to the Port of Wilmington. This alternative was retained for further analysis and screening.

2.1.6.4 New Location/Upgrade Existing Roadway (Freeway or Arterial Widening) Hybrid Alternative

The New Location/Upgrade Existing Roadway (Freeway or Arterial Widening) Hybrid Alternative concepts would include a combination of constructing roadway on new location and improving the existing US 17 and/or US 17 Business facility to a freeway or arterial facility. New location concepts may include sections from I-140 to US 17 in Brunswick County, US 17 in the vicinity of US 421 in Brunswick County crossing the Cape Fear River to US 421 in New Hanover County, or both. The remainder of the project would involve the construction of a controlled-access freeway facility or arterial along existing US 17 and/or US 17 Business. Interchange construction or reconstruction and the need for frontage roads along existing US 17 would be evaluated.

The New Location/Upgrade Existing Roadway Hybrid Alternative concept would improve traffic flow by providing additional capacity along portions of US 17 and US 17 Business and a new location roadway, as well as by eliminating at-grade intersections and controlling access to the facility for freeway options. It would also include improvements to existing US 421 within the City of Wilmington, further improving a route for trucks traveling to the Port of Wilmington. Therefore, this alternative was retained for further analysis and screening.

2.1.7 Results of Qualitative First Screening

The results of the qualitative first screening indicated that a freeway or arterial facility, either on new location, an upgrade of existing roadways, or a hybrid of new location and upgrade existing alternatives, would fulfill the identified needs and meet the purpose of the project.

2.1.8 Ability of Alternatives to Meet Secondary Benefits of Project

A secondary benefit of the project would be its compatibility with the transportation vision in the current LRTP for the region, the WMPO 2040 MTP (WMPO 2015a). The Cape Fear Crossing is depicted in the 2040 MTP as a roadway project with 12 routes under study. The 2040 MTP also recognizes the project as an important factor in freight movement in the region.

Another secondary benefit of the project would be to reduce hurricane evacuation clearance times for residents and visitors who use the area thoroughfares during evacuation, as well as aid in emergency evacuation from Duke Energy Progress' Brunswick Nuclear Plant in Southport. Refer to Section 2.3.3.3 for the analysis of hurricane evacuation clearance times and emergency evacuation in the area.

These secondary benefits were considered when evaluating alternatives, but were not used as a basis for eliminating alternatives based on the purpose and need or used as a screening factor to determine which alternatives were advanced to the quantitative second screening.

2.2 Quantitative Second Screening

2.2.1 Preliminary Corridor Segment Development

Preliminary corridor segments for the project were developed for the alternatives remaining after the first screening. Preliminary corridor segments were developed based on a range of factors, including data from the *Feasibility Study for the Wilmington Southern Bridge from US 17 Bypass near Bishop to US 421* (NCDOT 2003a), constraints identified on the land suitability mapping, basic design criteria, route continuity, and logical termini. The preliminary segments were analyzed to determine resources occurring within a 1,000-foot corridor.

The following sections describe the general constraints considered in developing the preliminary corridor segments.

2.2.1.1 Logical Termini/Independent Utility

FHWA regulations (23 CFR 771.111(f)) state that, in order to ensure meaningful evaluation of alternatives and to avoid commitments to transportation improvements before they are fully evaluated, a project must, “connect logical termini and be of sufficient length to address environmental matters on a broad scope; not restrict consideration of alternatives for other reasonably foreseeable transportation improvements; and have independent utility or independent significance.”

The logical termini for the proposed project include a western terminus in the vicinity of the I-140/US 17 interchange and an eastern terminus at US 421 and Shipyard Boulevard, in the vicinity of the Port of Wilmington’s southern gate. The traffic deficiencies identified in the purpose and need statement are closely linked to the traffic passing at the western terminus, in that traffic originating at this location and traveling to Wilmington generally uses US 17 and the Cape Fear Memorial Bridge. The eastern terminus of the US 421/Shipyard Boulevard intersection allows for a wide range of options to be considered that would improve the traffic operations and freight movements to and from the Port of Wilmington.

The project would have independent utility, even if no additional transportation improvements were made in the area. Independent of other projects, the proposed project would improve traffic flow and enhance freight movements beginning in the vicinity of US 17 and I-140 in Brunswick County to US 421 near the Port of Wilmington in southern New Hanover County.

Reasonably foreseeable transportation projects, as discussed in Chapter 4, were considered to be those projects near or adjacent to the proposed Cape Fear Crossing that were known to be under construction as of the date of the Draft Environmental Impact Statement (DEIS), those included in the NCDOT’s 2018-2027 STIP, and those included in the Cape Fear Transportation 2040 MTP fiscally constrained plan. The proposed project would not restrict other reasonably foreseeable projects.

2.2.1.2 Natural and Human Environment Features

Primary considerations identified during the scoping and early data collection processes included, but were not limited to, wetlands, streams, existing and proposed residential developments and neighborhoods, navigational channels, conservation land, and effects to the existing highway network. These available data were compiled to determine the constraints within the project study area. The objective of the land suitability mapping was to facilitate corridor segment development for the proposed project by combining engineering and environmental considerations.

The land suitability mapping for the project study area was developed using data layers obtained from a variety of geographic information system (GIS) databases, resource agency files, and aerial photography.

2.2.2 Results of Quantitative Second Screening

The quantitative second screening identified 29 segments that, when combined, resulted in 33 possible complete alternative alignments. The preliminary segments were analyzed to determine resources occurring within a 500-foot corridor (Figure 2-1).

The screening criteria for the quantitative second screening are based on potential impacts to natural resources, human environment, and cultural resources and the cost and other physical features associated with each segment. The second screening did not include the quantitative evaluation of traffic operations, freight movements, or the measures identified as potential secondary benefits of the project.

Table 2-1 provides a comparative analysis of the resources that occur within each of the corridors.

The preliminary corridor segments were evaluated to identify which corridors would be carried forward to the quantitative third analysis.

2.2.2.1 Segments Eliminated from Further Study

Nine segments were eliminated from further study for various reasons, including lack of system linkage, higher impacts to various resources, or undesirable length or indirect route as noted below.

- Segment 17: Eliminated due to NCCLT property and tidal marsh impacts.
- Segment 23: Eliminated due to NCCLT property and tidal marsh impacts.
- Segment 24: Eliminated due to link with Segments 17 and 23, tidal marsh impacts, width of Cape Fear River crossing, and circuitous nature from additional length.
- Segment 25: Eliminated due to engineering constraints associated with connecting to the I-140/US 17 interchange and service/access roads needed.
- Segment 11: Eliminated due to its circuitous nature and higher impacts compared to similar segments.
- Segment 12: Eliminated due to similarities in location and impacts with Segment 15 and because it bisects the Brunswick Forest development.
- Segment 19: Eliminated due to impacts to Significant Natural Heritage Areas adjacent to Town Creek and its associated wetland systems.
- Segment 18: Eliminated due to its link with Segment 19.
- Segment 16: Eliminated due to its link with Segment 17.

2.2.2.2 Corridors Recommended for Further Study

Figure 2-2 depicts the corridors recommended as preliminary build alternatives for further screening in the next phase of the alternative screening process. Conceptual design plans were prepared for alignments within each of these 20 corridors (A through T) and evaluated in the quantitative third screening to determine which alternatives would be carried forward for further detailed study.

Table 2-1: Segment and Corridor Summary of Impacts

Corridor	Segment Composition	Length (miles)	Construction Cost (millions \$)	Number of Interchanges	Number of Minor Road Crossings	Number of Railroad Crossings	Number of Major Power Easement Crossings	CAMA Areas of Environmental Concern (acres)	Residential Displacements	Business Displacements	Schools	Churches	Conservation Areas, NCCLT Property (acres)	Archaeological Sites	Historic Properties	Low Income Populations (number of relocations)	Minority Populations (number of relocations)	Section 4(f) Lands (acres)	Wetlands (acres)	Floodplains (acres)	Section 303(d) waters (linear feet)	Intermittent Streams (number of crossings)	Perennial Streams (number of crossings)	Essential Fish Habitat (acres)	Primary Nursery Areas	Federally Listed Species (T/E/FSC)	State-Listed Species	Habitat Area of Particular Concern (acres)	Potential Noise Receptors	VADs and EVADs (acres)	Gamelands (acres)	Segment Area (acres)
1	1-2-3-4-13	9.8	811	4	18	3	3	35.4	99	36	1	2	30	-	1	70	67	-	233	175	1200	2	8	63	46.7	-	-	55.3	135	-	14	594
2	1-2-3-16-17-24-27	12.2	919	4	20	2	3	80.7	50	9	-	-	133	3	2	6	3	-	274	255	1000	2	11	170	73.1	-	-	81.8	59	-	-	689
3	1-7-8-9-26	11.2	873	4	41	3	3	23.3	83	86	1	-	126	-	3	44	41	1	143	136	1700	1	6	28	25.9	3	5	22.7	169	-	5	573
4	10-11-3-4-5-27	11.9	904	4	31	1	3	41.9	85	17	-	-	37	-	2	84	3	-	188	192	1000	2	11	91	38.7	-	-	78.6	102	-	-	667
5	10-11-3-4-13	10.3	835	4	25	2	3	35.4	154	38	1	2	30	-	1	148	67	-	172	188	1200	2	10	63	46.7	-	-	55.3	192	-	14	622
6	10-11-3-16-17-24-27	12.7	942	4	27	1	3	80.7	105	11	-	-	133	3	2	84	3	-	213	269	1000	2	13	170	73.1	-	-	81.8	116	-	-	717
7	10-12-12a-4-5-27	10.7	851	4	27	1	2	41.9	85	15	-	-	37	-	2	84	3	-	171	183	1000	2	9	91	38.7	-	-	78.6	100	-	-	597
8	10-12-12a-4-13	9.1	782	4	21	2	2	35.4	154	36	1	2	30	-	1	148	67	-	155	179	1200	2	8	63	46.7	-	-	55.3	190	-	14	552
9	10-12-12a-16-17-24-27	11.5	889	4	23	1	2	80.7	105	9	-	-	133	3	2	84	3	-	197	259	1000	2	11	170	73.1	-	-	81.8	114	-	-	647
10	10-14-15-4-5-27	10.8	855	4	26	1	2	41.9	85	15	-	-	43	-	2	84	3	-	172	202	1000	1	10	91	38.7	-	-	78.6	100	-	-	602
11	10-14-15-4-13	9.2	785	4	20	2	2	35.4	154	36	1	2	36	-	1	148	67	-	156	198	1200	1	9	63	46.7	-	-	55.3	190	-	14	557
12	10-14-15-16-17-24-27	11.6	893	4	22	1	2	80.7	105	9	-	-	139	3	2	84	3	-	197	279	1000	1	12	170	73.1	-	-	81.8	114	-	-	652
13	18-19-15-4-13	9.5	798	4	20	3	1	69.6	133	36	1	2	48	-	1	127	79	-	188	239	1200	2	9	66	46.7	-	-	55.3	169	7	14	576
14	18-19-20-21-22-5-27	11.8	902	4	30	2	1	76.6	64	15	-	-	55	-	2	63	15	-	203	211	1000	1	9	103	38.7	-	-	78.6	79	7	-	665
15	18-19-20-21-22-13	10.3	832	4	24	3	1	70.1	133	36	1	2	48	-	1	127	79	-	187	207	1200	1	8	75	46.7	-	-	55.3	169	7	14	620
16	18-19-20-23-24-27	11.8	902	4	24	2	1	107.2	86	9	-	-	160	3	2	65	17	-	154	214	1000	1	10	107	73.2	-	-	81.8	95	7	-	666
17	10-14-20-23-24-27	11.4	885	4	23	2	2	76.1	18	15	-	-	55	1	2	11	11	-	186	232	1000	2	9	93	38.7	-	-	78.6	33	36	-	643
18	25-19-15-4-13	9.9	815	4	17	3	2	69.6	87	36	1	2	48	1	1	75	75	-	170	228	1200	2	8	65	46.7	-	-	55.3	123	36	14	598
19	25-19-20-21-22-5-27	12.2	919	4	27	2	2	76.6	18	15	-	-	55	1	2	11	11	-	185	200	1000	1	8	103	38.7	-	-	78.6	33	36	-	687
20	25-19-20-21-22-13	10.7	849	4	21	3	2	70.1	87	36	1	2	48	1	1	75	75	-	169	196	1200	1	7	75	46.7	-	-	55.3	123	36	14	642
21	25-19-20-23-24-27	12.2	919	4	21	2	2	107.2	40	9	-	-	160	4	2	13	13	-	136	203	1000	1	9	107	73.2	-	-	81.8	49	36	-	688
22	1-2-3-4-5-27	11.4	911	5	24	2	3	41.9	30	15	-	-	37	-	2	6	3	-	249	179	1000	2	9	91	38.7	-	-	78.6	45	-	-	639
23	18-19-15-4-5-27	11.1	868	4	26	2	1	76.1	64	15	-	-	55	-	2	63	15	-	204	243	1000	2	10	94	38.7	-	-	78.6	79	7	-	621
24	6-7-8-9-26	11.3	936	6	42	3	2	23.3	69	87	1	-	126	-	3	50	47	1	66.9	159	1700	-	7	28	25.9	3	5	22.7	156	-	5	576
25	1-2-3a-12a-4-13	10.0	848	5	18	3	3	35.4	99	36	1	2	30	-	1	70	67	-	221	162	1200	3	8	63	46.7	-	-	55.3	135	-	14	603

Table 2-1: Segment and Corridor Summary of Impacts

Corridor	Segment Composition	Length (miles)	Construction Cost (millions \$)	Number of Interchanges	Number of Minor Road Crossings	Number of Railroad Crossings	Number of Major Power Easement Crossings	CAMA Areas of Environmental Concern (acres)	Residential Displacements	Business Displacements	Schools	Churches	Conservation Areas, NCCLT Property (acres)	Archaeological Sites	Historic Properties	Low Income Populations (number of relocations)	Minority Populations (number of relocations)	Section 4(f) Lands (acres)	Wetlands (acres)	Floodplains (acres)	Section 303(d) waters (linear feet)	Intermittent Streams (number of crossings)	Perennial Streams (number of crossings)	Essential Fish Habitat (acres)	Primary Nursery Areas	Federally Listed Species (T/E/FSC)	State-Listed Species	Habitat Area of Particular Concern (acres)	Potential Noise Receptors	VADs and EVADs (acres)	Gamelands (acres)	Segment Area (acres)
26	1-2-3a-12a-4-5-27	11.5	918	5	24	2	3	41.9	30	15	-	-	37	-	2	6	3	-	237	166	1000	3	9	91	38.7	-	-	78.6	45	-	-	648
27	1-2-3a-12a-16-17-24-27	12.3	956	5	20	2	3	80.7	50	9	-	-	133	3	2	6	3	-	263	243	1000	3	11	170	73.1	-	-	81.8	59	-	-	698
28	10-11-3a-12a-4-13	10.5	842	4	25	2	3	35.4	154	38	1	2	30	-	1	148	67	-	160	176	1200	3	10	63	46.7	-	-	55.3	192	-	14	631
29	10-11-3a-12a-4-5-27	12.0	911	4	31	1	3	41.9	85	17	-	-	37	-	2	84	3	-	176	180	1000	3	11	91	38.7	-	-	78.6	102	-	-	676
30	10-11-3a-12a-16-17-24-27	12.9	949	4	27	1	3	80.7	105	11	-	-	133	3	2	84	3	-	202	256	1000	3	13	170	73.1	-	-	81.8	116	-	-	726
31	10-14-20-23-24-27	11.5	889	4	24	1	2	73	107	9	-	-	148	3	2	86	5	-	122	174	1000	-	10	105	73.2	-	-	81.8	116	-	-	647
32	10-14-20-21-22-5-27	11.5	889	4	30	1	2	42.4	85	15	-	-	43	-	2	84	3	-	171	171	1000	-	9	101	38.7	-	-	78.6	100	-	-	646
33	10-14-20-21-22-13	10.0	820	4	24	2	2	35.9	154	36	1	2	36	-	1	148	67	-	155	167	1200	-	8	72	46.7	-	-	55.3	190	-	14	601

2.3 Quantitative Third Screening

Similar to the screening criteria for the quantitative second screening, the third screening was based on evaluating the impacts for corridors that were advanced from the second screening. The quantitative evaluation was based on potential impacts to natural resources, the human environment and cultural resources, as well as the cost and other physical features associated with each corridor. The third screening included the quantitative evaluation of traffic operations but not freight movements or the measures identified as potential secondary benefits of the project.

2.3.1 Alternatives Evaluated in Quantitative Third Screening

In addition to the 20 corridors resulting from the quantitative second screening (Alternatives A through T), 8 additional alternatives were developed for further evaluation during the quantitative third screening based on feedback from the public and agency involvement.

At the public workshops held in March 2011, residents of the Stoney Creek, Snee Farm, and Planters Walk neighborhoods recommended a more southern route, as opposed to Alternatives K, L, M, and N, to reduce impacts to their residential areas. Four avoidance alternatives were produced as a result, referred to as K Avoidance, L Avoidance, M Avoidance, and N Avoidance. It was determined that these avoidance alternatives were viable options that would provide a better overall balance of impacts between the human and natural environments.

The Town of Leland adopted a resolution on March 21, 2013 (see Appendix A) requesting that NCDOT and WMPO “amend the Cape Fear River Crossing Environmental Study Area to include a newly identified viable option to cross the Cape Fear River.” On July 31, 2013, the WMPO TAC voted to request that NCDOT study the suggested alignment. This new location alternative would traverse an area south of Town Creek and include upgrade of existing US 17 (standard arterial widening option and freeway option) north of the I-140/US 17 interchange. These alternatives were referred to as Alternative U-Freeway (U-F) and Alternative U-Arterial Widening (U-AW).

The United States Environmental Protection Agency (USEPA) requested on June 25, 2013, that NCDOT study an additional upgrade/new location alignment hybrid that includes the upgrade of US 17 and a new location bridge south of the existing Cape Fear Memorial Bridge. Because this alignment includes the upgrade of US 17, two options were developed: freeway and arterial widening. These alternatives are referred to as Alternative V-Freeway (V-F) and Alternative V-Arterial Widening (V-AW).

With the addition of these alternatives, a total of 28 alternatives were developed and analyzed for the third screening (Figure 2-2). A description of these alternatives is included in Table 2-2.

Table 2-2: Alternatives Evaluated in Quantitative Third Screening

Alternative	Alternative Type	Description
A	New location	Begins at I-140 and crosses US 17, travels between Brunswick Forest and Mallory Creek developments, and crosses Cape Fear River to terminate at Independence Boulevard.
B	New location	Begins at I-140 and crosses US 17, travels between Brunswick Forest and Mallory Creek developments, and crosses Cape Fear River to terminate at Shipyard Boulevard.
C	New location	Begins at I-140 and crosses US 17, travels parallel to Wire Road, and crosses Cape Fear River to terminate at Independence Boulevard.
D	New location	Begins at I-140 and crosses US 17, travels parallel to Wire Road, and crosses Cape Fear River to terminate at Shipyard Boulevard.
E	Hybrid	Begins at I-140 to US 17 on new location; continues as upgrade of existing US 17 (freeway option).
F	Upgrade existing	Upgrade US 17 (freeway option).
G	Hybrid	Begins as upgrade existing US 17 (freeway option), then continues on new location between Brunswick Forest and Mallory Creek developments, and crosses Cape Fear River to terminate at Independence Boulevard.
H	Hybrid	Begins as upgrade existing US 17 (freeway option), then continues on new location between Brunswick Forest and Mallory Creek developments, and crosses Cape Fear River to terminate at Shipyard Boulevard.
I	Hybrid	Begins as upgrade existing US 17 (freeway option), then travels parallel to Wire Road, and crosses Cape Fear River to terminate at Independence Boulevard.
J	Hybrid	Begins as upgrade existing US 17 (freeway option), then travels parallel to Wire Road, and crosses Cape Fear River to terminate at Shipyard Boulevard.
K	New location	Begins at I-140 terminus through Snee Farm/Stoney Creek subdivisions, travels through Brunswick Forest, and crosses Cape Fear River to terminate at Independence Boulevard.
L	New location	Begins at I-140 terminus through Snee Farm/Stoney Creek subdivisions, travels through Brunswick Forest, and crosses Cape Fear River to terminate at Shipyard Boulevard.
M	New location	Begins at I-140 terminus through Snee Farm/Stoney Creek subdivisions, travels south of Brunswick Forest, and crosses Cape Fear River to terminate at Independence Boulevard.
N	New location	Begins at I-140 terminus through Snee Farm/Stoney Creek subdivisions, travels south of Brunswick Forest, and crosses Cape Fear River to terminate at Shipyard Boulevard.
O	Hybrid	Begins at I-140 to US 17 on new location; continues as upgrade of existing US 17 (arterial widening option).
P	Upgrade existing	Upgrade US 17 (arterial widening option).

Table 2-2: Alternatives Evaluated in Quantitative Third Screening

Alternative	Alternative Type	Description
Q	Hybrid	Begins as upgrade existing US 17 (arterial widening option), then continues on new location between Brunswick Forest and Mallory Creek developments, and crosses Cape Fear River to terminate at Independence Boulevard.
R	Hybrid	Begins as upgrade existing US 17 (arterial widening option), then continues on new location between Brunswick Forest and Mallory Creek developments, and crosses Cape Fear River to terminate at Shipyard Boulevard.
S	Hybrid	Begins as upgrade existing US 17 (arterial widening option), then travels parallel to Wire Road, and crosses Cape Fear River to terminate at Independence Boulevard.
T	Hybrid	Begins as upgrade existing US 17 (arterial widening option), then travels parallel to Wire Road, and crosses Cape Fear River to terminate at Shipyard Boulevard.
K avoidance	New location	Begins at I-140 terminus avoiding Snee Farm/Stoney Creek subdivisions, travels through Brunswick Forest, and crosses Cape Fear River to terminate at Independence Boulevard.
L avoidance	New location	Begins at I-140 terminus avoiding Snee Farm/Stoney Creek subdivisions, travels through Brunswick Forest, and crosses Cape Fear River to terminate at Shipyard Boulevard.
M avoidance	New location	Begins at I-140 terminus avoiding Snee Farm/Stoney Creek subdivisions, travels south of Brunswick Forest, and crosses Cape Fear River to terminate at Independence Boulevard.
N avoidance	New location	Begins at I-140 terminus avoiding Snee Farm/Stoney Creek subdivisions, travels south of Brunswick Forest, and crosses Cape Fear River to terminate at Shipyard Boulevard.
U-F	New location	Includes a portion of upgrading US 17 south of the I-140 terminus as a freeway, travels from US 17 east below Town Creek and the Town of Leland municipal limits to terminate at Independence Boulevard.
U-AW	New location	Includes a portion of upgrading US 17 south of the I-140 terminus as a standard arterial widening, travels from US 17 east below Town Creek and the Town of Leland municipal limits to terminate at Independence Boulevard.
V-F	Hybrid	Upgrades US 17 (freeway option) until the US 17/US 421 interchange, travels south along Eagle Island to terminate at US 421 just north of the Port of Wilmington.
V-AW	Hybrid	Upgrades US 17 (arterial widening option) until the US 17/US 421 interchange, travels south along Eagle Island to terminate at US 421 just north of the Port of Wilmington.

Note: All alternatives that do not terminate at Shipyard Boulevard in the City of Wilmington would include the upgrade of US 421 to Shipyard Boulevard in order to meet the purpose of and need for the project.

2.3.2 Conceptual Design Layouts

Conceptual design layouts with appropriate offsets were developed and included a horizontal alignment for the roadway, basic design of the interchanges, and assumed right-of-way limits. Construction limits in general were contained within an approximately 350-foot wide corridor for alignments on new location, 200-foot corridors for alignments or portion of alignments on existing US 17 designed as standard arterial widening, and 160-foot corridors for portions of alignments on existing US 421.

The conceptual design alignments were also analyzed with regard to their effect on travel time savings from the beginning and endpoints of the project (discussed in Section 2.3.3.2).

2.3.3 Detailed Study Alternatives

2.3.3.1 Preliminary Recommendations

The alternative options proposed for consideration by the Town of Leland (Alternative U-F and Alternative U-AW) and USEPA (Alternative V-F and Alternative V-AW) were presented to the environmental resource and regulatory agencies at a NEPA/Section 404 Merger meeting on September 18, 2013. The Merger Team agreed that the alignment developed by the Town of Leland was not a viable alternative due to the high degree of impact to environmental resources, the high cost, and the minimal travel time savings; therefore, the Merger Team agreed that Alternatives U-F and U-AW would be eliminated from further consideration.

At two merger meetings held in September and December 2013, there was consensus among the Merger Team to eliminate Alternatives E and O due to the amount of environmental impacts and poor travel time savings when compared to other alternatives. There was also agreement among the Merger Team that Alternatives A and D could be eliminated from further study, which would carry forward two alternatives that begin on I-140, northeast of the I-140/US 17 interchange, with one terminating at Shipyard Boulevard (Alternative B) and one terminating at Independence Boulevard (Alternative C).

Through coordination with the Merger Team after the December 2013 meeting, it was agreed that hybrid alternatives H/R and I/S would be eliminated from further consideration. Out of the four hybrid freeway alternative alignments (and the standard arterial widening alignments that correspond) that begin as upgrade of existing US 17 and then travel on new location to US 421, Alternative J/T had high residential relocations, the lowest impact to wetland and streams, and performed the best from a travel time savings standpoint. Alternative G/Q had low residential relocations, high wetland and stream impacts, and moderate travel time savings. In order to represent the differences in each group of alignments (Brunswick Forest east of power line and both Shipyard Boulevard and Independence Boulevard termini), as discussed at the CP 2 meeting, it was recommended that Alternative G/Q and Alternative J/T remain as DSAs, with Alternative H/R and Alternative I/S eliminated from further consideration.

It was decided that two of the avoidance alternatives (Alternative M Avoidance and Alternative N Avoidance) should remain for further study to compare to other alternatives; therefore, Alternative K

Avoidance and Alternative L Avoidance (in addition to Alternatives K through N) were eliminated from further consideration.

The Merger Team agreed to recommend 12 alternatives be carried forward as detailed study alternatives at Concurrence Point (CP) 2 in February 2014. These alternatives are shown on Figure 2-3 and Figure 2-4 and include the following:

- Alternatives B and C
- Alternatives F and P
- Alternatives G and Q
- Alternatives J and T
- Alternatives M Avoidance and N Avoidance
- Alternatives V-AW and V-F

An impact comparison shown at CP 2A of the 12 alternatives is shown in Table 2-3.

2.3.3.2 Traffic Simulation Analysis

Analysis Methodology

A Traffic Simulation Report was developed to compare performance measures of the arterial widening and freeway options for alternatives that include all or a portion of existing US 17 (NCDOT 2015d). The traffic simulation was completed using TransModeler (Version 4.0, Build 5770).

Measures of effectiveness (MOEs) are system performance statistics that best characterize the degree to which a particular alternative meets the project purpose and need. No one MOE is capable of providing all the information necessary to compare alternatives. The following MOEs were used for the traffic simulation.

- Travel times between selected points within the network (travel time study corridor)
- Travel speeds between selected points within the network (travel time study corridor)
- Total number of trips (region-wide network)
- Vehicle miles traveled (VMT) (region-wide network)
- Total travel time (region-wide network)
- Average speed (region-wide network)
- Total delay (region-wide network)
- Average delay (region-wide network)

The objective of the *Traffic Simulation Report* was to analyze the traffic operations for the proposed project. Traffic conditions for each of the detailed study alternatives, including major roadways in the surrounding roadway network, were simulated. A summary of the simulation results of each alternative, impacts the project would have on traffic operations in the project study area, and ranking of alternatives in order of traffic impacts to the network are provided in this section and the *Traffic Simulation Report*.

Table 2-3: Impacts of 12 Detailed Study Alternatives

Resource	Alternative											
	B	C	F	G	J	M Avoidance	N Avoidance	P	Q	T	V-AW	V-F
Length of Corridor (miles)	11.1	11.3	12.0	11.3	11.2	12.3	12.2	12.0	11.5	11.4	11.8	11.8
Construction Cost (millions \$)	760	768	425	779	675	774	763	380	745	733	511	553
Number of Interchanges	5	4	6	5	5	4	4	3	4	4	6	7
Number of Railroad Crossings	2	1	1	1	2	1	2	1	1	2	2	2
Number of Major Power Easement Crossings	2	2	4	3	2	1	1	4	2	2	4	4
Business Relocations (number within proposed right-of-way)	80	36	125	46	89	43	84	101	45	86	82	92
Residential Relocations (number within proposed right-of-way)	129	75	283	34	175	46	143	256	24	168	163	170
Total Relocations	209	111	408	80	264	89	227	357	69	254	245	262
Minority and/or Low-Income Populations Present	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Archaeological Sites (number within impact area)	0	0	0	0	0	1	1	0	0	0	0	0
Historic Properties (adverse effect)	0	0	2	0	0	0	0	2	0	0	1	1
Section 4(f) Lands (acres within proposed right-of-way)	1.2	0.0	73.9	0.0	1.2	0.0	1.2	73.9	0.0	1.2	16.7	16.7
USS North Carolina Battleship (number of parcels impacted)	0	0	0	0	0	0	0	0	0	0	0	0
Wilmington Historic District (number of parcels impacted)	0	0	296	0	0	0	0	296	0	0	26	26
Sunset Park Historic District (number of parcels impacted)	0	0	22	0	0	0	0	22	0	0	22	22
Hanover Heights Historic District (number of parcels impacted)	2	0	0	0	1	0	1	0	0	1	0	0
Wilmington National Guard Armory (number of parcels impacted)	0	0	1	0	0	0	0	1	0	0	1	1
Clarendon House (number of parcels impacted)	0	0	0	0	0	0	0	0	0	0	0	0
Goodman House (number of parcels impacted)	0	0	0	0	0	0	0	0	0	0	0	0
Lake Forest Defense Housing	0	0	0	0	0	0	0	0	0	0	0	0
Wetlands (acres within impact area) ^a	107.9	111.1	74.1	62.4	54.5	72.4	66.8	58.9	49.8	42.4	140.9	155.9
Surface Waters/Ponds (acres within impact area) ^a	0.05	0.05	0.07	0.05	0.05	0.00	0.00	0.05	0.04	0.04	0.05	0.07

Table 2-3: Impacts of 12 Detailed Study Alternatives

Resource	Alternative											
	B	C	F	G	J	M Avoidance	N Avoidance	P	Q	T	V-AW	V-F
Floodplains (acres within impact area) ^a	16.6	15.8	135.0	50.4	46.2	44.2	42.5	119.1	34.0	29.8	218.2	234.3
Streams (linear feet within impact area) ^a	2,528	7,944	3,466	8,539	2,456	13,170	7,439	2,125	7,748	1,667	2,098	3,510
CAMA Wetlands (acres within impact area) ^a	1.8	1.8	18.9	1.8	1.8	2.3	2.3	19.0	1.8	1.8	89.1	89.1
Large Public Trust Waters (acres) ^a	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4	0.4
Small Public Trust Waters (linear feet) ^a	302	303	489	298	297	236	238	557	297	301	489	489
Federally-Protected Species Habitat Present	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Potential Noise Receptors ^b	1167	781	2717	865	1449	552	1052	2468	779	1367	1508	1799
Lands Managed for Conservation and Open Space (acres within impact area) ^c	0.0	0.0	5.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	76.5	76.5
Community Facilities Impacted: Cemeteries (number within proposed right-of-way)	1	0	0	0	1	0	1	0	0	1	0	0
Community Facilities Impacted: Churches (number within proposed right-of-way)	3	3	4	4	4	4	4	3	3	3	4	5
Community Facilities Impacted: Fire Stations (number within proposed right-of-way)	0	1	0	1	0	1	0	0	1	0	0	0
Section 6(f) (number within proposed right-of-way)	0	0	3	0	0	0	0	3	0	0	2	2
Forested Land (acres within impact area)	110.3	123.2	44.7	141.9	121.2	178.6	161.7	10.7	106.3	84.7	10.7	44.7
Farmland soils (acres within proposed right-of-way)	477.5	551.2	280.6	512.9	466.7	550.1	490.1	151.6	413.3	367.0	151.4	280.8
Parks (number within proposed right-of-way)	0	0	3	0	0	0	0	3	0	0	3	3
% Decrease in Travel Time Compared to 2040 No-Build	30.41	27.07	44.28	29.54	30.38	29.51	27.04	35.92	24.66	26.86	35.71	42.52

^a Impact area equals the slope stake limits plus 40 feet.

^b Noise receptors counted within 700 feet of centerline (350 feet on either side) along existing roadways and 600 feet (300 feet on either side) of new location alternatives.

^c Includes land surrounding the USS North Carolina Battleship site (managed by North Carolina Department of Natural and Cultural Resources) and Eagle Island (managed by USACE).

The 2040 forecasts assume construction of projects as listed in the WMPO LRTP. The current forecast (NCDOT 2014) is consistent with the *Cape Fear Commutes: 2035 Transportation Plan* (WMPO 2010), which was the WMPO's LRTP at the time of the traffic forecast. No projects were assumed to be completed between 2035 and 2040 within the forecast study area that would significantly alter traffic patterns. Projects in the LRTP that directly affect the proposed project include:

- Projects assumed to be constructed by 2020
 - US 17 Access Management Improvements (R-4732)
 - I-140 Wilmington Bypass (R-2633 A & B)
 - US 17/US 74/76 widening from NC 133 to US 421 (R-3601)
 - Oleander Drive (US 76) and S. College Road (NC 132) intersection improvements (U-4718)
- Projects assumed to be constructed by 2040
 - South Front Street widening from Cape Fear Memorial Bridge to Burnett Boulevard (LRTP No. 100)
 - US 74 Isabel Holmes Bridge Interchange with US 17/US 421 (LRTP No. 29)
 - S. College Road widening from Wilshire Boulevard to Shipyard Boulevard (LRTP No. 104)

2040 Build Traffic Projections

The 2040 build traffic forecasts were developed based on the methodology described in the *Traffic Forecast Technical Memorandum* (NCDOT 2014). Table 2-4 summarizes the 2040 future year build forecast data.

All detailed study alternatives have similar total screenline volumes crossing the Cape Fear River. The differences in screenline volumes are generally reflective of changes in raw model volumes between scenarios. The No-Build scenario reasonably has slightly lower screenline volumes due to lower overall roadway capacity crossing the Cape Fear River. Volume differences between alternatives generally reflect the attractiveness of alternatives based on model assignment. Overall, forecasted screenline volumes between alternatives are within approximately 3 percent of each other. Compared to No-Build conditions, US 17 corridor volumes would increase in Alternatives F, P, V-F, and V-AW due to additional capacity and decrease in the other eight detailed study alternatives due to additional capacity on new location. All detailed study alternatives would reduce volumes on the existing Cape Fear Memorial Bridge and to a lesser extent on the Isabel Holmes Bridge and I-140 (Wilmington Bypass) bridge as traffic is diverted to the new location. Alternative F, which would upgrade the existing Cape Fear Memorial Bridge, is the exception since it would utilize the Cape Fear Memorial Bridge, and would not provide an additional crossing of the Cape Fear River.

Table 2-4: 2040 Future Year Detailed Study Alternative Forecast Summary

Detailed Study Alternative	Alternative Type	US 17 Corridor Range ^a	Cape Fear Crossing Bridge	Cape Fear Memorial Bridge	Cape Fear River Screenline ^b
2040 No-Build	No-Build	51,000–109,800	N/A	79,600	23,600
B	New Location	48,400–79,600	52,300	61,800	210,300
C	New Location	48,400–77,100	55,800	60,900	211,700
F	Upgrade Existing	59,200–121,20	N/A ^c	91,300	204,500
G	Hybrid	58,300–77,100	55,000	61,300	211,700
J	Hybrid	57,500–79,600	51,000	62,200	210,000
M Avoidance	New Location	48,400–77,100	53,600	61,600	211,100
N Avoidance	New Location	48,400–79,600	50,000	62,600	211,100
P	Upgrade Existing	59,200–121,200	N/A ^c	91,300	204,500
Q	Hybrid	57,300–7,100	55,000	61,300	211,700
T	Hybrid	57,500–79,600	51,000	62,200	210,000
V-F	Hybrid	59,200–121,200	43,600	66,200	212,900
V-AW	Hybrid	59,200–121,200	43,600	66,200	212,900

Source: *Traffic Forecast Technical Memorandum* (NCDOT 2014).

^a Forecast range on US 17 from I-140 interchange to Cape Fear Memorial Bridge.

^b The Cape Fear River screenline is presented to provide an overall comparison between alternatives of trips to/from Brunswick and New Hanover counties.

^c For Alternatives F and P, the Cape Fear Memorial Bridge serves as the Cape Fear Crossing Bridge, and carries traffic for both.

Traffic Simulation Analysis Results

Alternative F would provide the most benefit to the roadway network in both the AM and PM peak periods. Alternatives G, J, V-F, and V-AW would provide the most positive regional impacts of the remaining alternatives in the peak periods. Alternative M Avoidance would have the fewest positive impacts in both time periods.

The AM and PM peak period region-wide network speeds would increase by approximately 6 mph with Alternative F in place. This is a 25 percent increase in the average speed of the No-Build Alternative. Alternative V-F would have the second highest impacts to regional speeds with improvements only slightly lower than Alternative F. Alternative M Avoidance would provide the least improvements to the regional speeds with increases of approximately 2 mph in both the AM and PM peak periods.

Alternatives G and J (freeway hybrid alternatives) ranked third and fourth in regional network speed improvements. Of the strictly new location alternatives, Alternative B would provide the most improvement in the AM peak period, and Alternative C ranked highest in the PM peak period.

Comparisons of average delay provided similar results. Alternatives F and V-F reduced the average trip time by approximately three minutes (38 percent decrease from the No-Build Alternative) in both peak periods. Alternative M Avoidance had the least improvements by only reducing average trip times by less than one minute (12 percent decrease from the No-Build Alternative). Alternatives G and J (freeway hybrid alternatives) also ranked high in reducing the average trip times.

The results of the travel time study are summarized in Table 2-5.

Table 2-5: Travel Time Benefits per Alternative

Alternative	Overall Corridor Travel Time (mm:ss)	Percent Decrease in Travel Time Compared to 2040 No-Build Conditions	Corridor Travel Time Savings Ranking
2040 No-Build	120:31	n/a	13
Alternative B	83:52	30.41	5
Alternative C	87:54	27.07	9
Alternative F	67:09	44.28	1
Alternative G	84:55	29.54	8
Alternative J	83:54	30.38	6
Alternative M Avoidance	84:57	29.51	7
Alternative N Avoidance	87:56	27.04	10
Alternative P	77:14	35.92	3
Alternative Q	90:48	24.66	12
Alternative T	88:09	26.86	11
Alternative V-AW	77:29	35.71	4
Alternative V-F	69:16	42.52	2

2.3.3.3 Future Hurricane Evacuation Clearance Times

A hurricane evacuation analysis was prepared for the 12 detailed study alternatives to determine the reduction or addition to traffic while evacuating a Category 3 hurricane with 75 percent tourist occupancy (NCDOT 2016a). The effect of the proposed project on the worst location of the evacuation bottleneck congestion is the most important issue to consider in weighing evacuation impacts. The worst bottlenecks include:

- College Road northbound south of I-40
- Cape Fear Memorial Bridge westbound
- US 74/76 causeway westbound from Cape Fear Memorial Bridge to US 17 split
- US 74/76 from US 17 split to I-140
- US 74/76 westbound out of Brunswick County

- US 421 between Shipyard Boulevard and Wilmington Central Business District
- US 17 in Brunswick County between I-140 and Cape Fear Crossing improvement alternatives

A qualitative measure of major positive, positive, neutral, negative, or major negative is assigned to each roadway segment/improvement alternative pairing based on the reduction or addition to evacuation congestion at that spot. Descriptors reflect the following impacts for a Category 3 hurricane at 75 percent tourist occupancy:

- MAJOR POSITIVE: Greater than 25 percent reduction in segment clearance time
- POSITIVE: 5 percent to 25 percent reduction in segment clearance time
- NEUTRAL: No substantial reduction or increase in segment clearance time
- NEGATIVE: 5 percent to 25 percent increase in segment clearance time
- MAJOR NEGATIVE: Greater than 25 percent increase in segment clearance time

The analysis found that all improvement alternatives would have major positive benefits to evacuation congestion and associated clearance time requirements for the Cape Fear Memorial Bridge. Major positive impacts would be achieved by substantial capacity improvements and/or reduction in number of evacuation vehicles. The alternatives on new location would substantially reduce evacuation vehicle volumes on the bridge. Alternatives F and P would greatly improve capacity, thereby achieving substantial relief to evacuation congestion. Alternative F would provide the greatest reduction in segment clearance time as multiple westbound lanes would be added and the segment functions as a freeway.

US 74/76 from the Cape Fear Memorial Bridge to I-140 would experience major positive evacuation impacts for Alternatives B, M Avoidance, N Avoidance, Q, and T as evacuation vehicles are attracted to the new Cape Fear Crossing segments away from this critical evacuation congestion area. Alternatives F and P would provide positive relief to the US 74/76 segment between the Cape Fear Memorial Bridge and US 17 split but little impact to the US 74/76 segment between the US 17 split and I-140. That is because the “upgrade existing” alternatives would upgrade westbound evacuation service volume on one segment but not the other.

US 421 between Shipyard Boulevard and downtown Wilmington would experience major positive evacuation impacts for Alternatives B, M Avoidance, N Avoidance, Q, and T as evacuation traffic is shifted from the arterial approaches to the Cape Fear Memorial Bridge to the new potential crossings of the Cape Fear River. The upgrade existing alternatives would have lesser positive impacts but would relieve some evacuation congestion through capacity improvements on US 421 and approaches to the Cape Fear Memorial Bridge.

US 17 in Brunswick County east of I-140 would experience major negative evacuation congestion impacts from Alternatives Q and T, and negative but lesser negative impacts from Alternatives G and J. This is because these alignments end at US 17 rather than continue to I-140. Evacuation traffic would exit the Cape Fear Crossing onto US 17 and travel southbound to the southern terminus of I-140. This section of US 17, even with capacity improvements, would experience substantial levels of background traffic and evacuation congestion.

2.3.3.4 Detailed Study Alternatives Eliminated from Further Consideration

A follow-up meeting with the Merger Team was held August 17, 2017, to discuss eliminating several alternatives due to relocations, impacts to historic resources and Section 4(f) resources, and impacts to natural resources. Table 2-3 shows the impact comparison of the 12 detailed study alternatives. The Merger Team reached concurrence to eliminate Alternatives F and P, Alternative C, Alternative G, Alternative J, and Alternative V-F. The reasons for eliminating these alternatives are provided in the following sections.

Alternatives F and P

Alternatives F and P include upgrading US 17 from the I-140/US 17 interchange to US 421 and Shipyard Boulevard in the City of Wilmington. The alternatives were designed as a freeway (Alternative F) and as a standard widening (Alternative P).

Alternative F includes a six-lane freeway typical section with service roads beginning at I-140 (western terminus) and extending to SR 1438 (Lanvale Road). Between SR 1438 (Lanvale Road) and US 74/76, a four-lane typical section with service roads is proposed. Auxiliary lanes are proposed from the Lanvale Road interchange to the split diamond interchange at West Gate Drive. From US 74/76 to US 421 in the City of Wilmington, the typical section would widen to an eight-lane freeway. The typical section of the Cape Fear River Crossing would be an eight-lane divided facility. Once the bridge reaches ground level east of the Cape Fear River, three lanes would continue onto US 76 East (Dawson Street) and one lane would continue onto US 421. Along US 421 a six-lane arterial widening typical section is proposed.

Alternative P is proposed to be a six-lane arterial widening to the outside on US 17 from I-140 (western terminus) to SR 1438 (Lanvale Road). From SR 1438 (Lanvale Road) to US 74/76, an eight-lane arterial widening to the outside typical section is proposed. From US 74/76 to US 421 in the City of Wilmington, the typical section is proposed to be the same as Alternative F. The roadway would be widened to an eight-lane freeway from US 74/76 to US 421. The typical section of the Cape Fear River Crossing would be an eight-lane divided facility. Once the bridge reaches ground level east of the Cape Fear River, three lanes would continue onto US 76 East (Dawson Street) and one lane would continue onto US 421. Along US 421 a six-lane arterial widening typical section is proposed.

Alternatives F and P would affect the second and third highest number of homes and businesses of all the detailed study alternatives and would have an adverse effect on the Wilmington Historic District and USS North Carolina Battleship due to right-of-way and visual impacts. Public opposition to these alternatives largely stemmed from impacts to the historic district, and the Historic Wilmington Foundation added the Wilmington Historic District to the 2017 Historic Wilmington Foundation Watch List due to Alternatives F and P.

FHWA also noted that they cannot authorize federal funding for these alternatives under Section 4(f) of the United States Department of Transportation (USDOT) Act of 1966. The FHWA determined the presence of feasible and prudent alternatives that avoid the Wilmington Historic District and other resources protected by Section 4(f) of the USDOT Act.

Alternative C

This new location alternative includes a four-lane typical section and begins with an interchange at I-140, runs 2.4 miles southeast to an interchange at US 17, and continues southeast 4.0 miles to an interchange at NC 133. The alternative then crosses the Cape Fear River to an interchange at River Road and ends in 1.2 miles at an interchange at US 421 and Independence Boulevard. This alternative also includes upgrading US 421 to Shipyard Boulevard. Along US 421 a six-lane arterial widening typical section is proposed.

It was agreed by the Merger Team to eliminate Alternative C as a detailed study alternative due to the high number of stream and wetland impacts.

Alternative G

This alternative begins at the I-140/US 17 interchange, upgrading existing US 17 for approximately 2 miles, then continues on new location between the Brunswick Forest and Mallory Creek developments, largely avoiding impacts to Brunswick Forest, and crosses the Cape Fear River to terminate at Independence Boulevard. Alternative G is designed as a freeway for its entire length.

Alternative G would include a six-lane freeway typical section with service roads on US 17 beginning at I-140 (western terminus) and extending to SR 1438 (Lanvale Road). Between SR 1438 (Lanvale Road) and West Gate Drive/Grandiflora Drive (where the alternative begins on new location), a six-lane freeway widening typical section without service roads is proposed. Once the alternative continues on new location, a four-lane divided freeway is proposed into the City of Wilmington, terminating at Independence Boulevard. Upgrades to US 421 from Independence Boulevard to Shipyard Boulevard are proposed as a six-lane arterial widening typical section. Upgrades along NC 133 in the vicinity of the proposed interchange would include a four-lane divided facility.

Alternative G was eliminated due to having the second highest number of stream impacts of any of the alternatives. An alternative with the same alignment but lower impacts, Alternative Q, would remain as a detailed study alternative.

Alternative J

This alternative begins at the I-140/US 17 interchange, upgrading existing US 17 for approximately 2 miles, then continues on new location parallel to Wire Road and crosses the Cape Fear River to terminate at Shipyard Boulevard.

Alternative J would include a six-lane freeway typical section with service roads on US 17 beginning at I-140 (western terminus) and extending to SR 1438 (Lanvale Road). Between SR 1438 (Lanvale Road) and West Gate Drive/Grandiflora Drive (where the alternative begins on new location), a six-lane freeway widening typical section without service roads is proposed. Once the alternative continues on new location, a four-lane divided freeway is proposed into the City of Wilmington, terminating at Shipyard Boulevard. Upgrades to US 421 are proposed as a four-lane arterial widening typical section, with some

additional improvements to accommodate the additional traffic volumes. Upgrades along NC 133 in the vicinity of the proposed interchange would include a four-lane divided facility.

Alternative J was eliminated due to having the third highest relocations of homes and businesses of any of the alternatives. An alternative with the same alignment but lower impacts, Alternative T, would remain as a detailed study alternative.

Alternative V-F

This alternative would include upgrading US 17 to the US 17/US 421 interchange, then travel south along Eagle Island on new location, and cross the Cape Fear River to terminate at US 421 and Shipyard Boulevard.

Alternative V-F would include a six-lane freeway typical section with service roads beginning at I-140 (western terminus) and extending to SR 1438 (Lanvale Road). Between SR 1438 (Lanvale Road) and US 74/76, a four-lane typical section with service roads where required is proposed.

The Merger Team agreed to eliminate Alternative V-F due to high wetland impacts and adverse effects to the historic district in downtown Wilmington and the USS North Carolina Battleship. While FHWA noted that they cannot authorize federal dollars for Alternative V-F under Section 4(f) of the USDOT Act of 1966 because there are other feasible and prudent avoidance alternatives, it was agreed Alternative V-AW could remain for detailed study due to potential design refinements to lower impacts to the district.

2.3.4 Design Refinement of Detailed Study Alternatives

In a resolution from the WMPO dated May 31, 2017, the WMPO indicated support for Alternative M Avoidance and/or Alternative N Avoidance as their preferred alternatives (WMPO 2017a). Included in the resolution was the indication by the NCSPA that a vertical navigational clearance of 215 feet for any alignment south of the Port of Wilmington would be required to accommodate present or future shipping requirements. Alternatives south of the Port of Wilmington include Alternatives B, C, G, J, M Avoidance, N Avoidance, Q, and T.

NCDOT met with the NCSPA on August 15, 2017, to discuss concepts to raise the minimum navigational clearance of the bridge. This coordination ultimately concluded with revised designs in New Hanover County for the aforementioned alternatives. Revised designs for Alternatives B, J, N Avoidance, and T eliminated the proposed ramps at Worth Street. Revised designs for Alternatives C, G, M Avoidance, and Q maintained the existing alignment; however, the proposed ramps to River Road (SR 1100) were separated from the mainline farther west, thus allowing the ramps to achieve a desirable grade to River Road.

2.3.5 Current Detailed Study Alternatives

Decisions from the Merger Team on August 17, 2017, resulted in six alternatives remaining for detailed study in this DEIS. These are described in the following sections and shown on Figure 2-5 and Figure 2-6.

2.3.5.1 Alternative B

This alternative begins at I-140 and crosses US 17, travels between the Brunswick Forest and Mallory Creek developments, and crosses the Cape Fear River to Shipyard Boulevard.

Alternative B is proposed as a four-lane divided freeway for its entirety, and is 11.1 miles in length.

2.3.5.2 Alternatives M Avoidance and N Avoidance

These alternatives begin at the I-140/US 17 interchange, avoid the Snee Farm/Stoney Creek subdivisions, travel south of Brunswick Forest, and cross the Cape Fear River to either Independence Boulevard (Alternative M Avoidance) or Shipyard Boulevard (Alternative N Avoidance).

Alternatives M Avoidance and N Avoidance are proposed as a four-lane divided freeway for the entirety of the alternative. Upgrades to US 421 from Independence Boulevard to Shipyard Boulevard as a part of Alternative M Avoidance are proposed as a six-lane arterial widening typical section. Alternatives M Avoidance and N Avoidance are 12.3 and 12.2 miles in length, respectively.

2.3.5.3 Alternative Q

This alternative begins at the I-140/US 17 interchange, upgrades existing US 17 for approximately 2 miles, then continues on new location between the Brunswick Forest and Mallory Creek developments, largely avoiding impacts to Brunswick Forest, and crosses the Cape Fear River to Independence Boulevard. Alternative Q is proposed as a six-lane arterial widening to the outside typical section on US 17 from I-140 to West Gate Drive/Grandiflora Drive (where the alternative begins on new location). Once the alternative continues on new location to the south and east, a four-lane divided freeway will carry it across the Cape Fear River to Independence Boulevard. Upgrades to US 421 from Independence Boulevard to Shipyard Boulevard are proposed as a six-lane arterial widening typical section. Upgrades along NC 133 in the vicinity of the proposed interchange would include a four-lane divided facility. Alternative Q is 11.5 miles in length.

2.3.5.4 Alternative T

This alternative begins at the I-140/US 17 interchange, upgrades existing US 17 for approximately 2 miles, then continues on new location parallel to Wire Road and crosses the Cape Fear River to Shipyard Boulevard.

Alternative T is proposed as a six-lane arterial widening to the outside typical section on US 17 from I-140 to West Gate Drive/Grandiflora Drive (where the alternative begins on new location). Once the alternative continues on new location to the south and east, a four-lane divided freeway will carry it across the Cape Fear River to Shipyard Boulevard. Upgrades to US 421 are proposed as a four-lane arterial widening typical section, with some additional improvements to accommodate the additional traffic volumes. Upgrades along NC 133 in the vicinity of the proposed interchange would include a four-lane divided facility. Alternative T is 11.4 miles in length.

2.3.5.5 Alternative V-AW

This alternative begins at the I-140/US 17 interchange and includes upgrading US 17 to the US 17/US 421 interchange, then travel south along Eagle Island on new location, and cross the Cape Fear River to terminate at US 421 and Shipyard Boulevard just north of the Port of Wilmington.

Alternative V-AW is proposed to be a six-lane arterial widening to the outside on US 17 from I-140 (western terminus) to SR 1438 (Lanvale Road). From SR 1438 (Lanvale Road) to US 74/76, an eight-lane arterial widening to the outside typical section is proposed. The roadway would be widened to an eight-lane freeway from US 74/76 to US 421. A fixed-span bridge crossing the Cape Fear River is proposed to terminate at US 421 in the City of Wilmington and include capacity and access management upgrades to US 421 to Shipyard Boulevard. Alternative V-AW is 11.8 miles in length.

2.3.6 Detailed Study Alternatives Design Criteria

The design criteria used to develop the detailed study alternative designs are based on policies set forth in the American Association of State Highway and Transportation Officials (AASHTO) *A Policy on Geometric Design of Highways and Streets* (2004) and the NCDOT *Roadway Design Manual* (2013). A brief summary of the design criteria is included in Table 2-6.

Table 2-6: Design Criteria Summary

Design Control	Facility	Value
Design Speed	New Location Freeway	70 mph
	Upgrade Existing Freeway	60 mph
	Freeway Flyover (Rural)	60 mph
	Freeway Flyover (Urban)	40 mph
	Freeway Ramp	50 mph
	Freeway Loop (Rural)	30 mph
	Freeway Loop (Urban)	25 mph
	Upgrade Existing Arterial	50 mph
	US 421 Widening	50 mph
Right-of-Way Offset	New Location Freeway	150 feet (300 feet total) offset from centerline
	Upgrade Existing Freeway	175 feet (350 feet total)
	Flyover/Ramp/Loop	150 feet
	Upgrade Existing Arterial	150 feet (300 feet total)
	US 421 Widening	75 feet (150 feet total)
	Existing Two-lane Road	60 feet (120 feet total)
	Existing Four-lane Road	100 feet (200 feet total)
Control of Access at Interchanges	All Interchanges	1,000 feet along y-line beyond ramp terminals

2.3.6.1 Typical Section

The typical sections used for the Cape Fear Crossing project are influenced by the type of facility required to fulfill the project's purpose and need. Alternatives on new location are designed as a freeway. Alternatives that include upgrades to US 17 are designed as an arterial widening. Typical sections for the detailed study alternatives are shown on Figure 2-7 through Figure 2-13.

Four-Lane Divided

The four-lane typical section includes four 12-foot lanes (two in each direction) with 14-foot outside shoulders (12-foot paved) with a 46-foot median containing 6-foot inside shoulders (4-foot paved) with service roads as needed. This typical section is used for the mainline for Alternatives B, Q, T, M Avoidance, and N Avoidance.

Four-Lane Arterial Widening

The four-lane arterial widening typical section includes four 12-foot lanes (two in each direction) with 10-foot berms, 2-foot 6-inch curb and gutter, and a 30-foot raised median. This typical section is used for US 421 (Carolina Beach Road) for Alternatives B, T, and N Avoidance.

Six-Lane Arterial Widening

The six-lane arterial widening typical section includes six 12-foot lanes (three in each direction) with 10-foot berms, 2-foot 6-inch curb and gutter, and a 23-foot raised median. This typical section is used for US 421 (Carolina Beach Road) for Alternatives Q, M Avoidance, and V-AW.

The six-lane arterial widening typical section includes six 12-foot lanes (three in each direction) with 12-foot outside shoulders (10-foot paved) with a 46- to 60-foot median containing 6-foot inside shoulders (4-foot paved). This typical section is used for US 17 from I-140 to SR 1438 (Lanvale Road) for Alternative V-AW, and for US 17 from I-140 to West Gate Drive/Grandiflora Drive for Alternatives Q and T.

Eight-Lane Freeway

The eight-lane freeway typical section includes eight 12-foot lanes (four in each direction) with 14-foot outside shoulders (12-foot paved) with a 46-foot median containing 6-foot inside shoulders (4-foot paved). This typical section is used for US 17 from US 74/76 to US 421 for Alternative V-AW.

Eight-Lane Arterial Widening

The eight-lane freeway typical section includes eight 12-foot lanes (four in each direction) with 12-foot outside shoulders (10-foot paved) with a 46- to 60-foot median containing 6-foot inside shoulders (4-foot paved). This typical section is used for US 17 from SR 1438 (Lanvale Road) to US 74/76 for Alternative V-AW.

Cape Fear Crossing Bridge

The Cape Fear Crossing bridge typical section for Alternatives B, Q, T, M Avoidance, N Avoidance, and V-AW includes four 12-foot lanes (two in each direction) with 12-foot outside shoulders and 4-foot inside shoulders with a 24-foot median containing a dividing barrier.

2.3.6.2 Traffic Operations Analysis

The traffic forecast used for the traffic operations analyses of the no-build and build alternatives was obtained from the *Traffic Forecast Technical Memorandum* (NCDOT 2014).

The *Capacity Analysis Report* (NCDOT 2018b) summarizes the capacity analysis findings for the proposed project. The report includes an evaluation of the 2013 and 2040 No-Build Conditions, as discussed in Section 1.3.1.1, and the 2040 Build Conditions for the six detailed study alternatives carried forward for study in this DEIS. Table 2-7 provides a summary of the findings of the capacity analysis for the 2040 build alternatives. All intersections analyzed within the project limits perform at LOS D or better, and/or with a volume-to-capacity ratio of 0.85 or better, during both peak hours. For analysis purposes, a volume-to-capacity ratio of 0.85 or less is assumed to have adequate capacity and meet minimum LOS D requirements. The analysis of the build alternatives assumes that the local transportation system would evolve as currently planned, including implementation of the proposed project.

Table 2-7: 2040 Build Alternatives Traffic Capacity Summary

Alternative	Number of Elements ^a	LOS A	LOS B	LOS C	LOS D	LOS E	LOS F
Alternative B	67	8	29	22	8	0	0
Alternative M Avoidance	55	5	13	29	7	1 ^b	0
Alternative N Avoidance	58	5	18	28	7	0	0
Alternative Q	57	7	13	27	9	1 ^b	0
Alternative T	53	4	19	21	9	0	0
Alternative V-AW	70	6	17	34	11	0	2 ^b

^a Elements include freeway basic segments, freeway weaving, freeway merges and diverges, and signalized and unsignalized intersections as reported in Table 10 of the *Capacity Analysis Report* (NCDOT 2018b).

^b Elements with LOS E or F have volume-to-capacity ratio of less than 0.85.

As noted in Chapter 1, once a preferred alternative has been identified, a new traffic forecast will be prepared, of which a new base year will be developed. An updated capacity analysis will be prepared based upon this updated forecast. Designs of the preferred alternative will be refined based upon these updated traffic studies.

2.4 Costs

Preliminary cost estimates for the detailed study alternatives are presented in Table 2-8.

Table 2-8: Cost Estimates for Detailed Study Alternatives

Alternative	Estimated Construction Cost (millions)	Estimated Right-of-Way Cost (millions)	Estimated Utility Relocation Cost (millions)	Total Cost (millions)
Alternative B	\$743.30	\$248.21	\$3.60	\$995.11
Alternative M Avoidance	\$808.13	\$96.48	\$2.03	\$906.64
Alternative N Avoidance	\$770.17	\$189.27	\$2.03	\$961.47
Alternative Q	\$775.61	\$90.04	\$2.03	\$867.68
Alternative T	\$718.93	\$215.58	\$2.03	\$936.54
Alternative V-AW	\$507.67	\$107.03	\$4.48	\$619.18

2.5 Toll Financing Considerations

As noted in Section 1.1.2, the Cape Fear Crossing was initially anticipated to be funded partially by tolls early in the project planning process. When the project was reinitiated in 2013, planning and design for the project was continued as a non-tolled facility funded by WMPO Surface Transportation Direct Attributable (STP-DA) funds. The WMPO is currently coordinating with the NCTA and FHWA to develop a tolling feasibility study, pending completion of the WMPO travel demand model update. In discussions with FHWA and the WMPO, tolling will not be precluded from consideration as a financing tool. The WMPO 2040 MTP indicates that the funding for the Cape Fear Crossing project would include tolling (WMPO 2015a). Using tolls, NCDOT could provide a portion of the funding, which could be added to other funding sources and allow construction of the project earlier than would be possible with traditional funding sources alone. It is assumed that toll collection for this project would be all-electronic using open road tolling technology. Open road tolling allows for tolls to be collected at highway speeds and eliminates the need for conventional toll plazas, with no need for motorists to stop or slow down in order to pay tolls.

Tolling is not being used to screen out any alternatives and the selection of the preferred alternative will be based on factors such as cost, design considerations, community impacts, natural resource impacts, stakeholder involvement, and various other criteria as described in this DEIS.

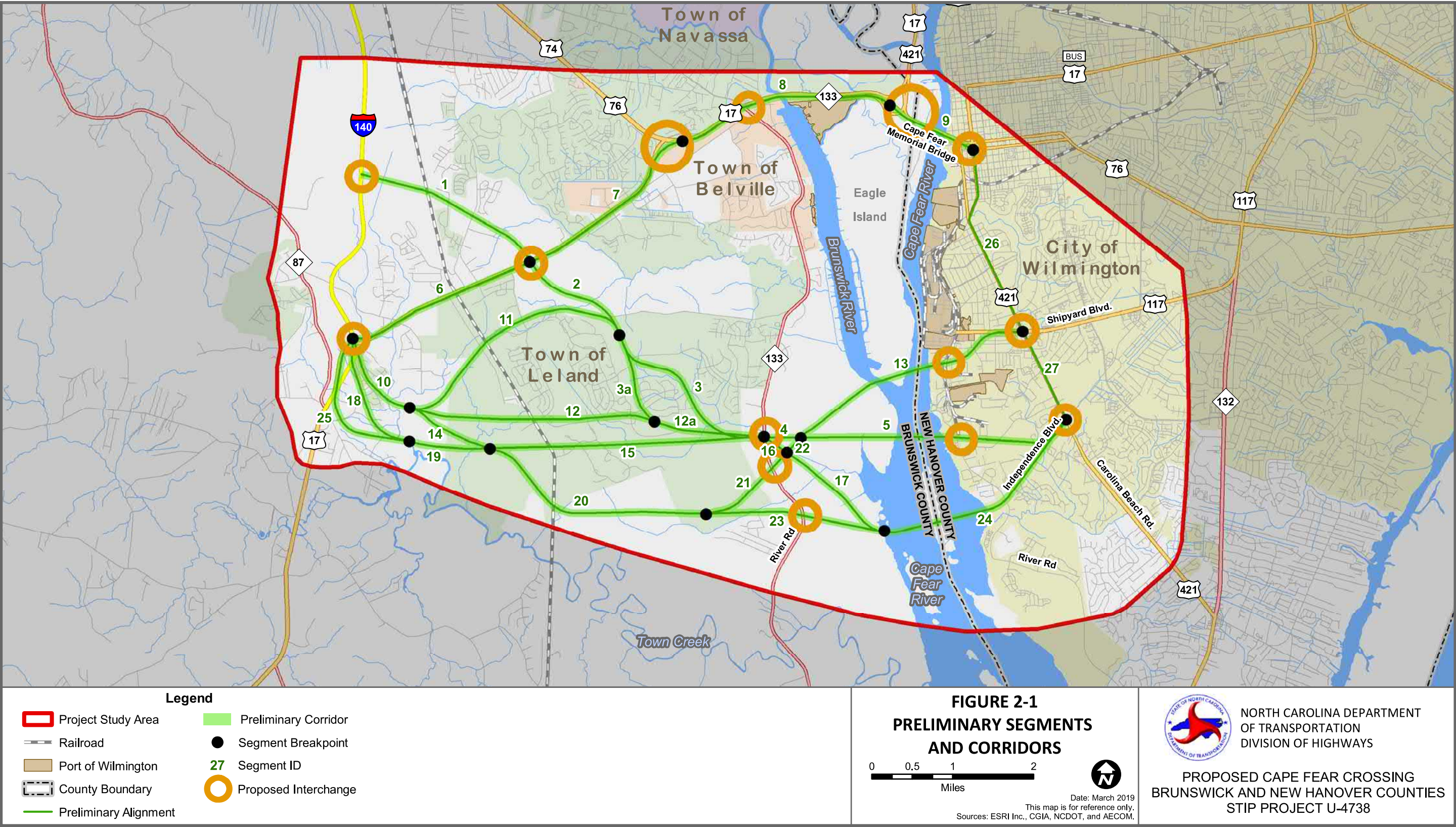


Figure 2-1: Preliminary Segments and Corridors

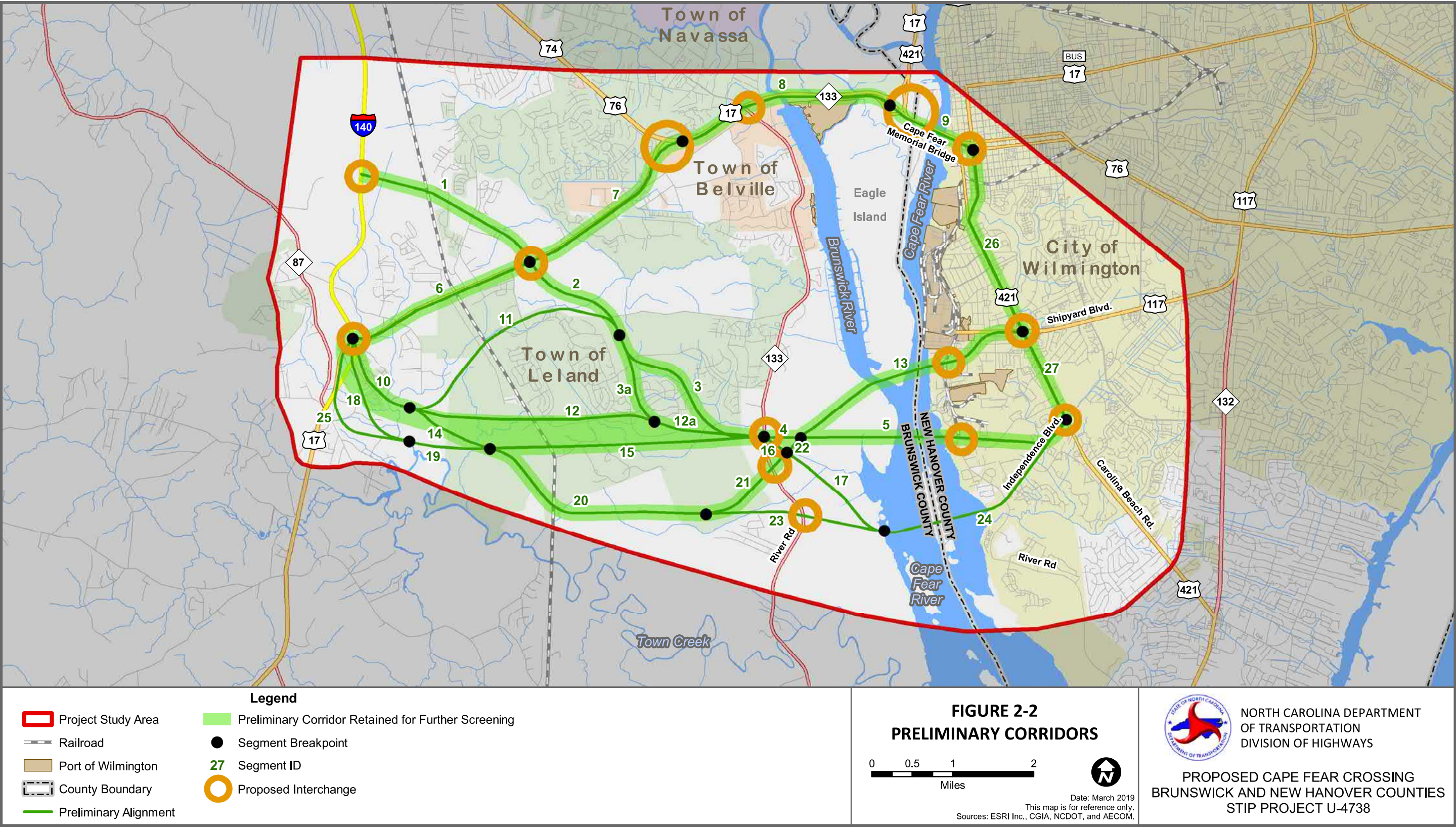


Figure 2-2: Preliminary Corridors

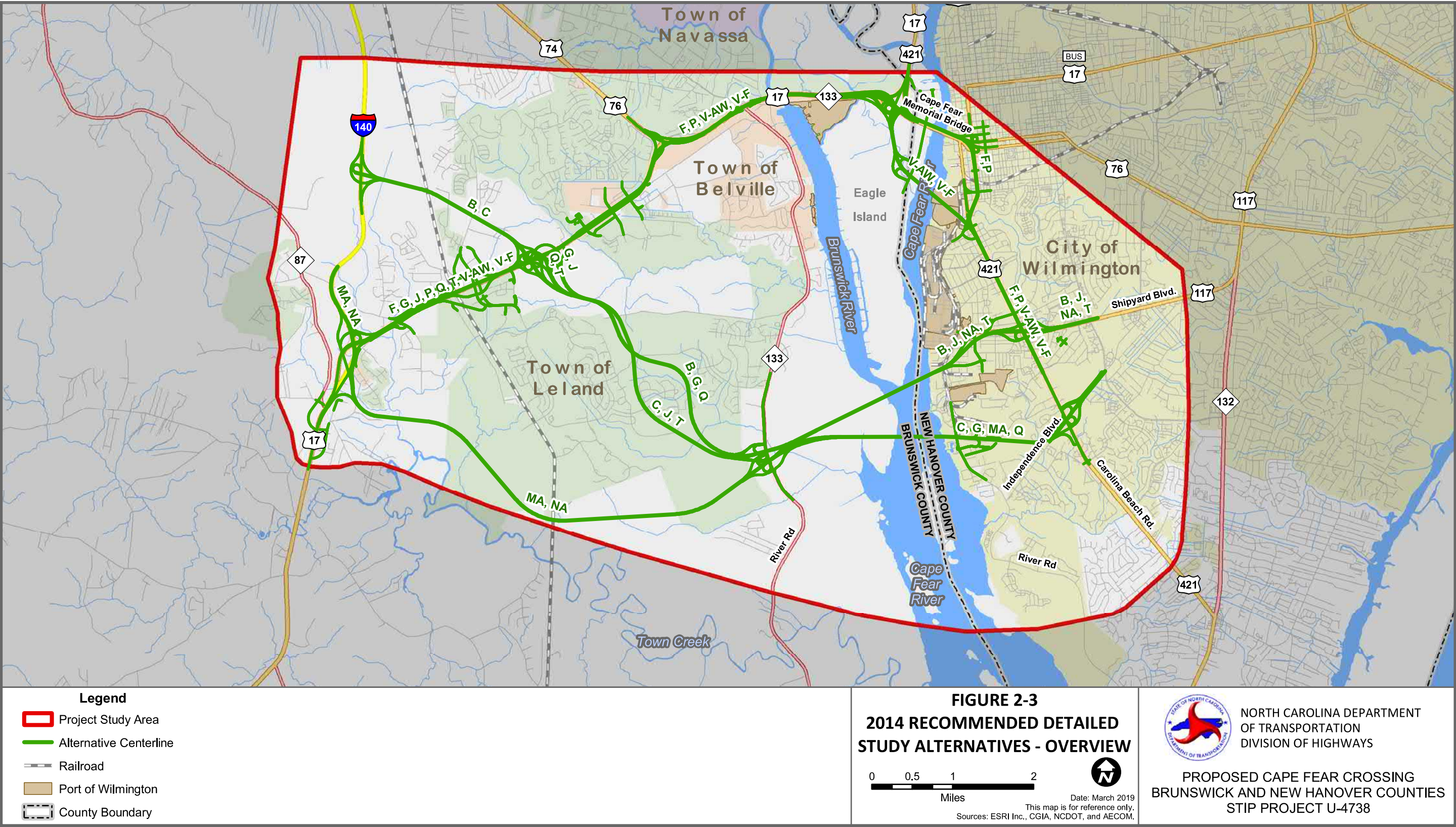


Figure 2-3: 2014 Recommended Detailed Study Alternatives – Overview

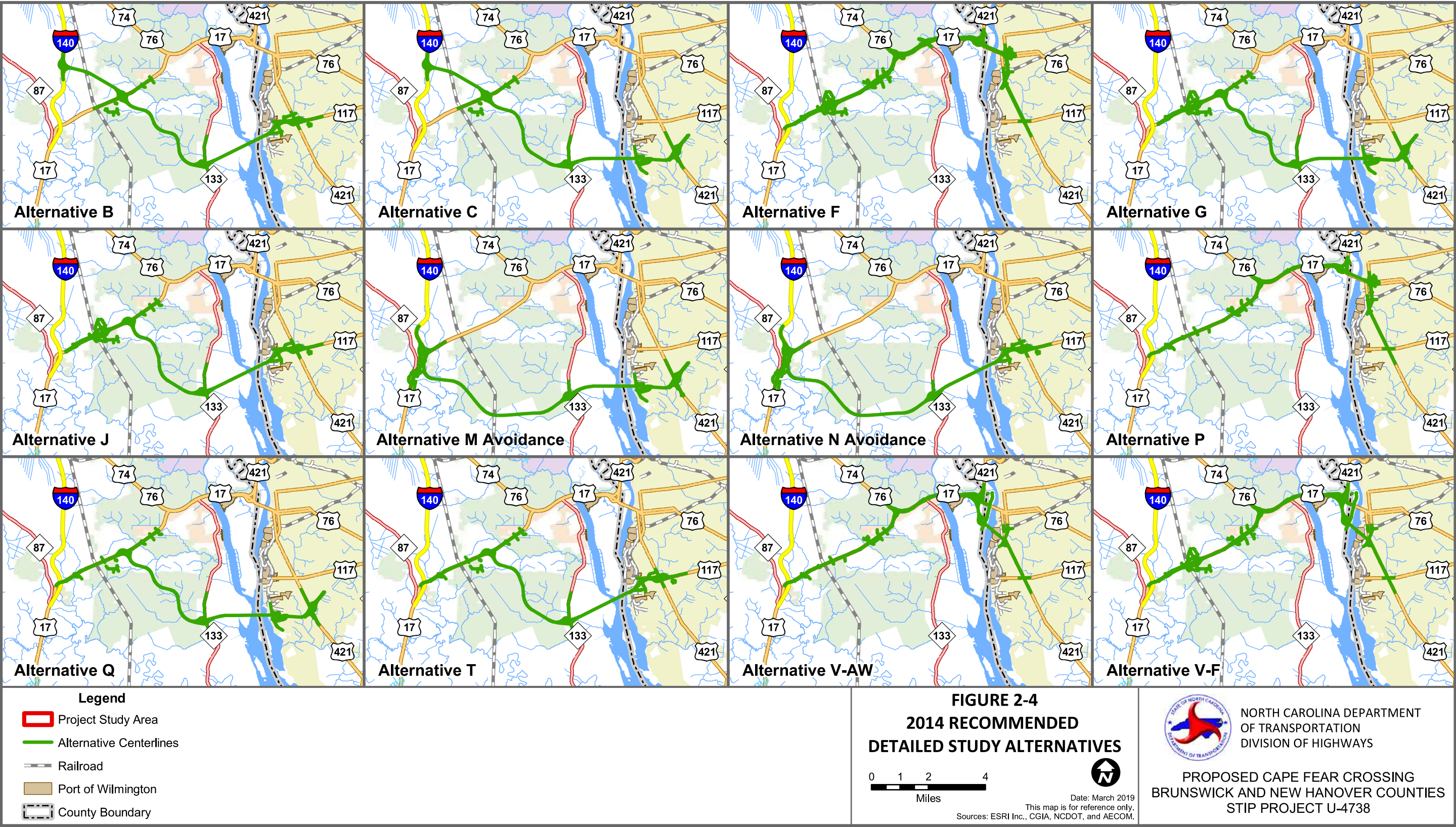


Figure 2-4: 2014 Recommended Detailed Study Alternatives

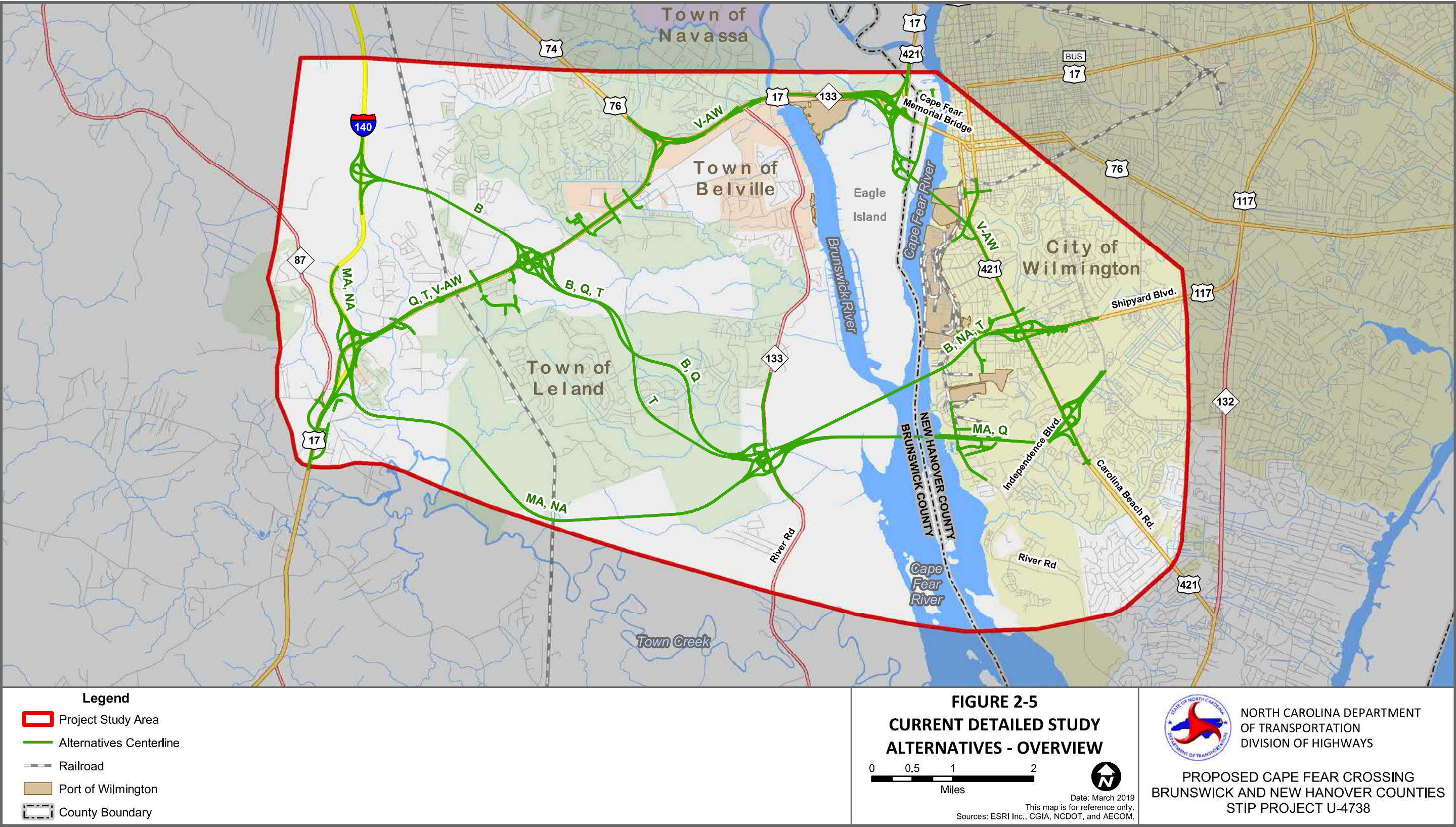


Figure 2-5: Current Detailed Study Alternatives – Overview

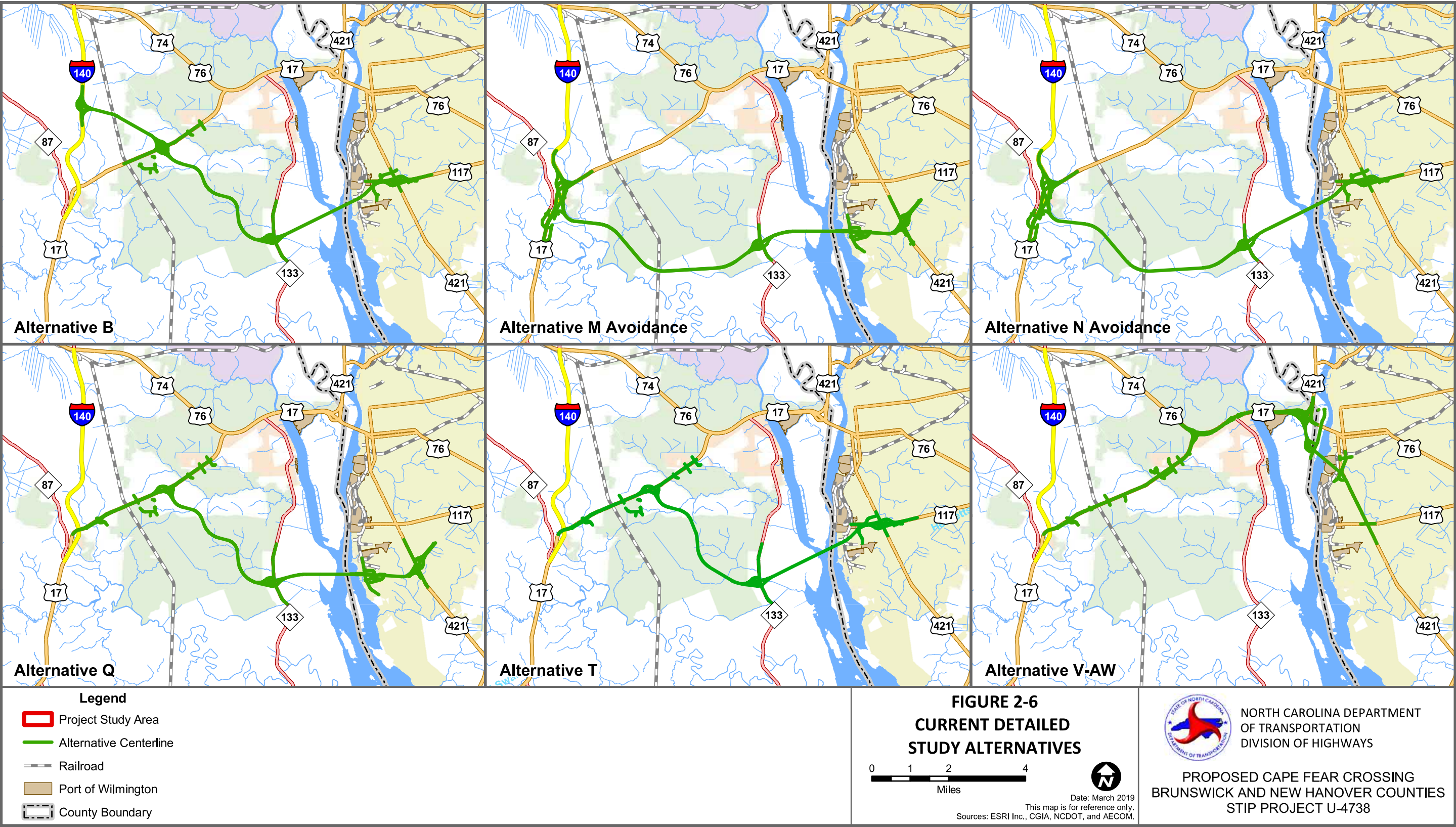


Figure 2-6: Current Detailed Study Alternatives

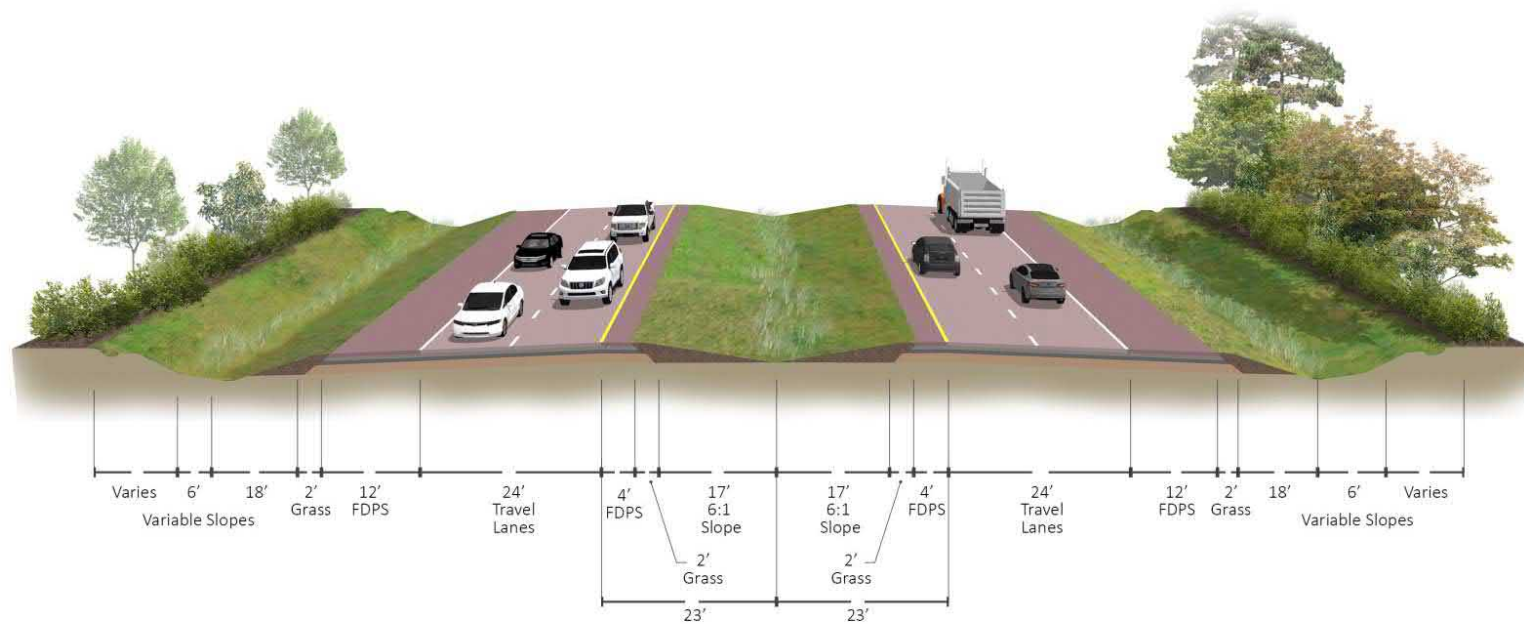


Figure 2-7: Current Detailed Study Alternatives Typical Section – four-lane divided

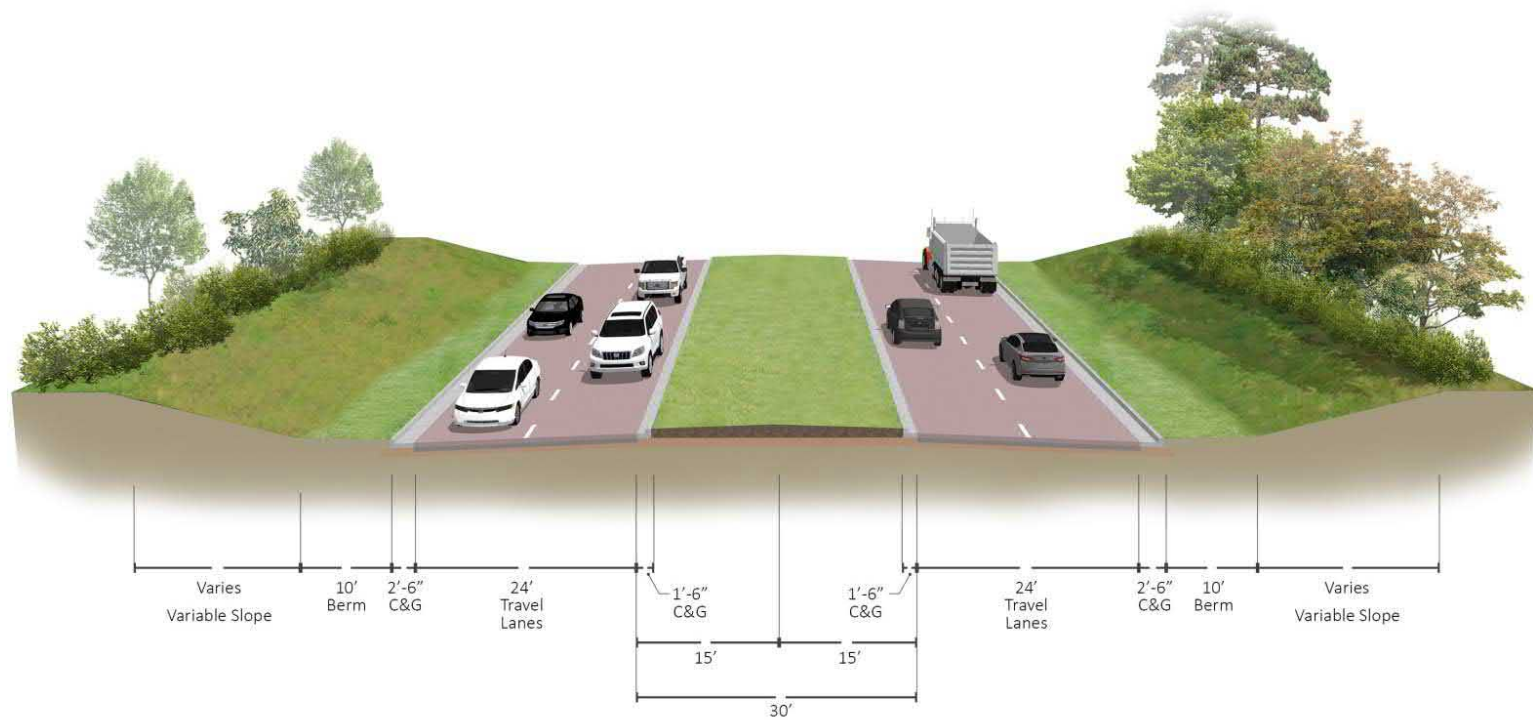


Figure 2-8: Current Detailed Study Alternatives Typical Section – four-lane arterial widening

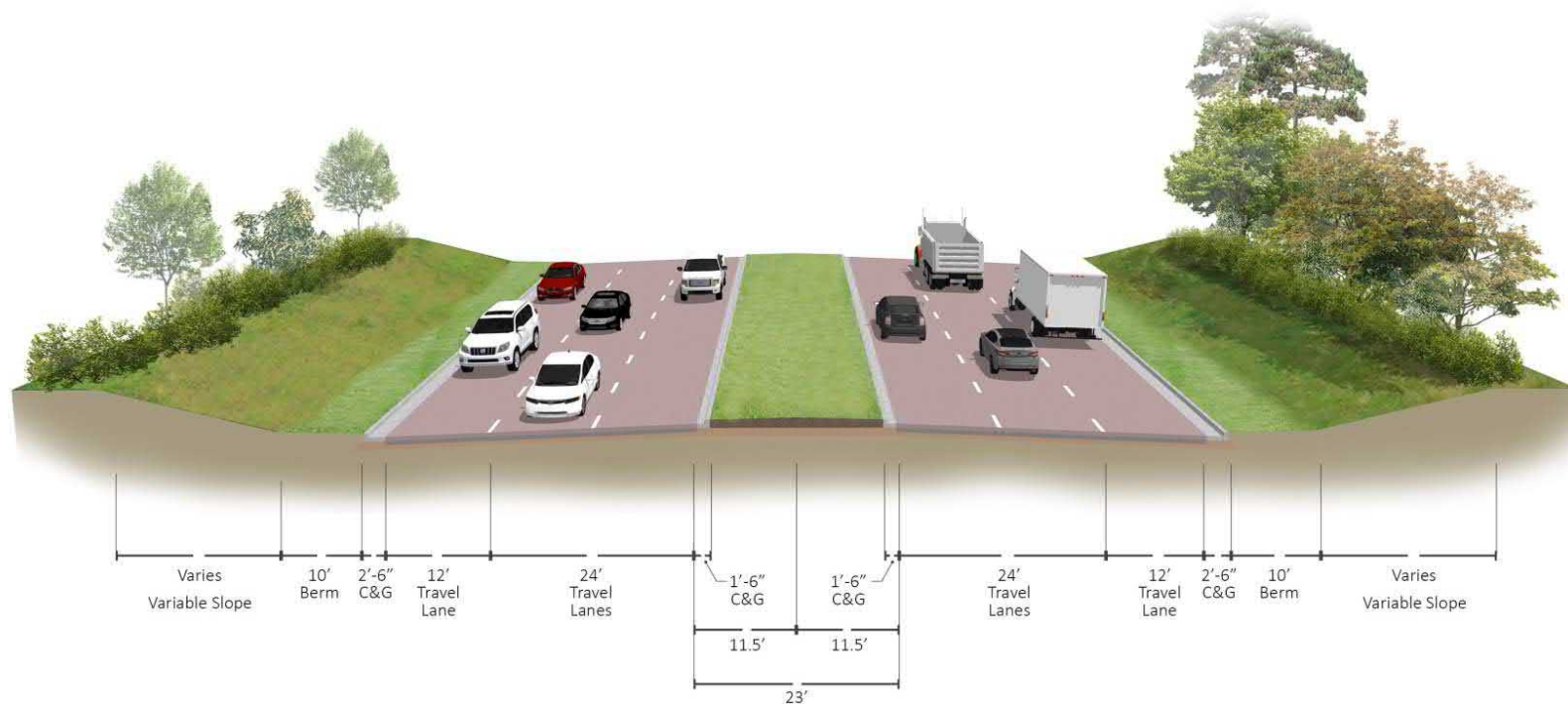


Figure 2-9: Current Detailed Study Alternatives Typical Section – six-lane arterial widening (US 421)

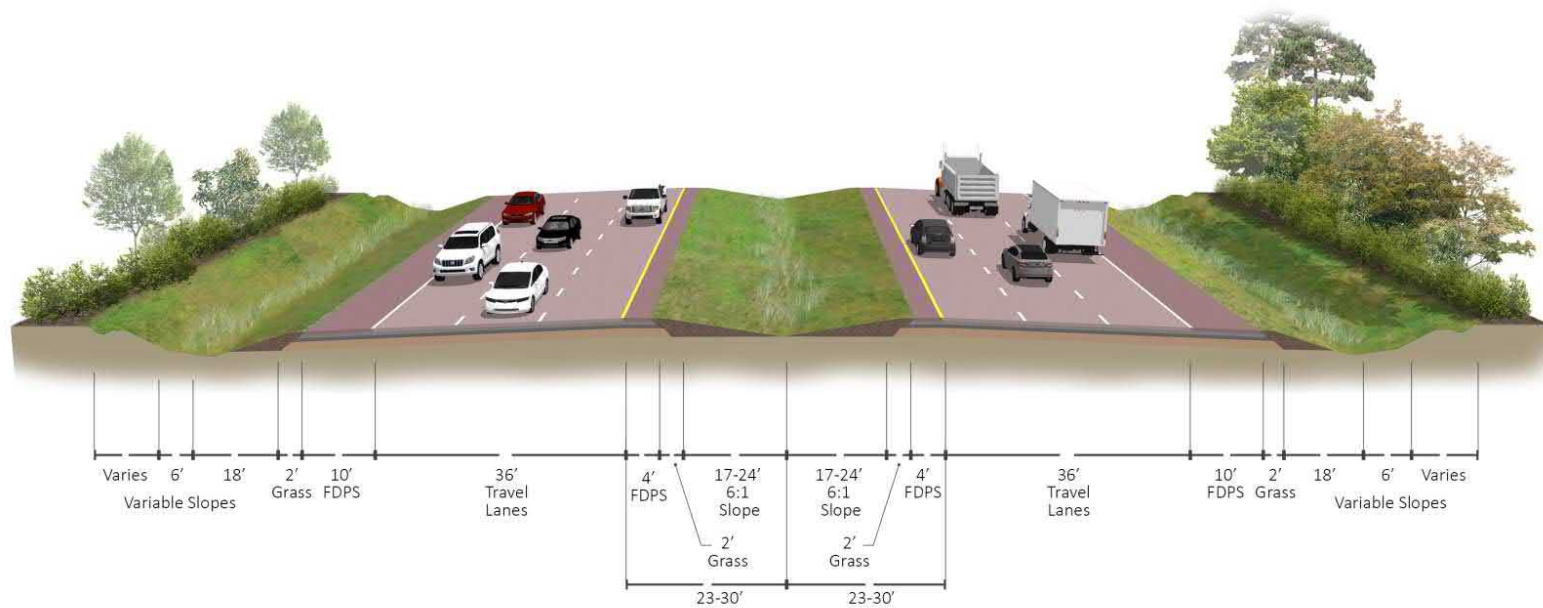


Figure 2-10: Current Detailed Study Alternatives Typical Section – six-lane arterial widening (US 17)

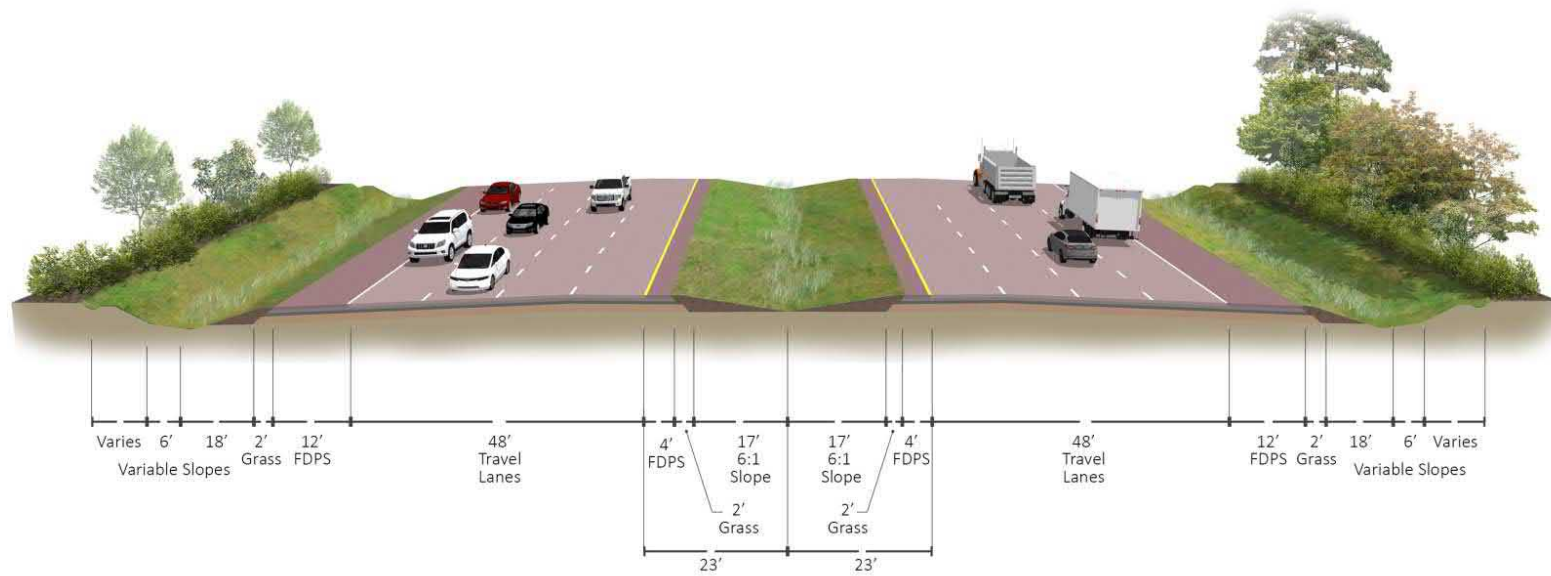


Figure 2-11: Current Detailed Study Alternatives Typical Section – eight-lane freeway

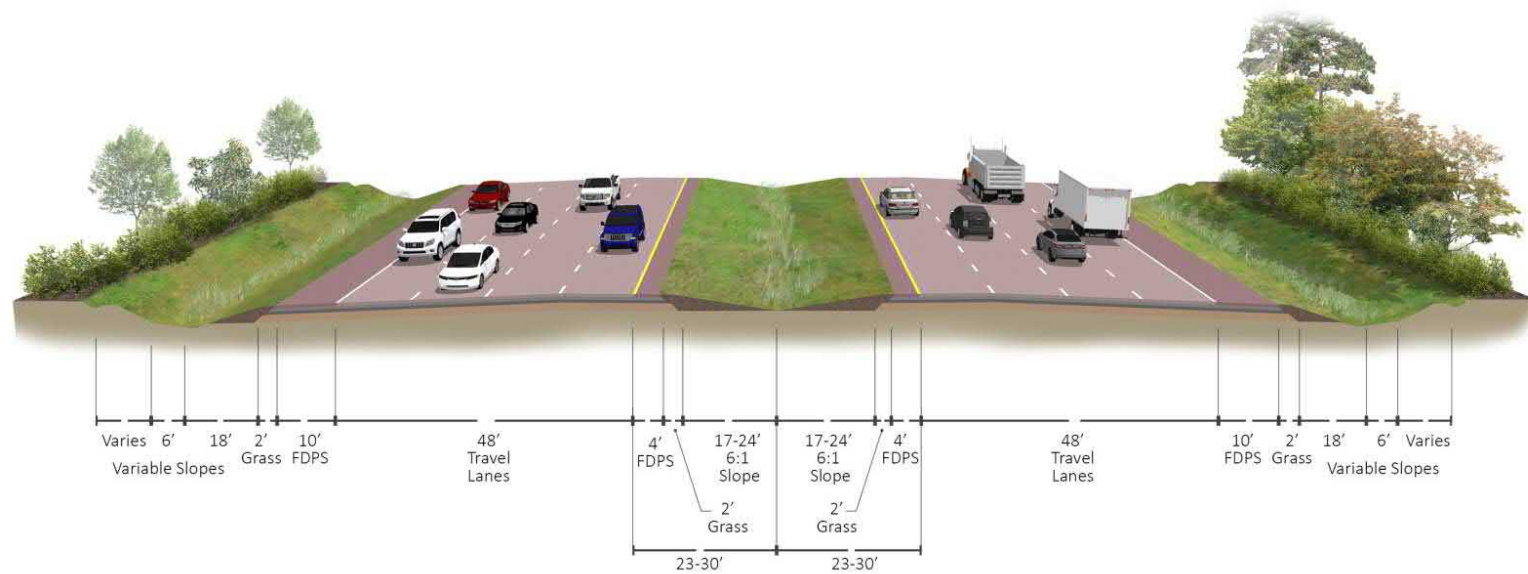


Figure 2-12: Current Detailed Study Alternatives Typical Section – eight-lane arterial widening

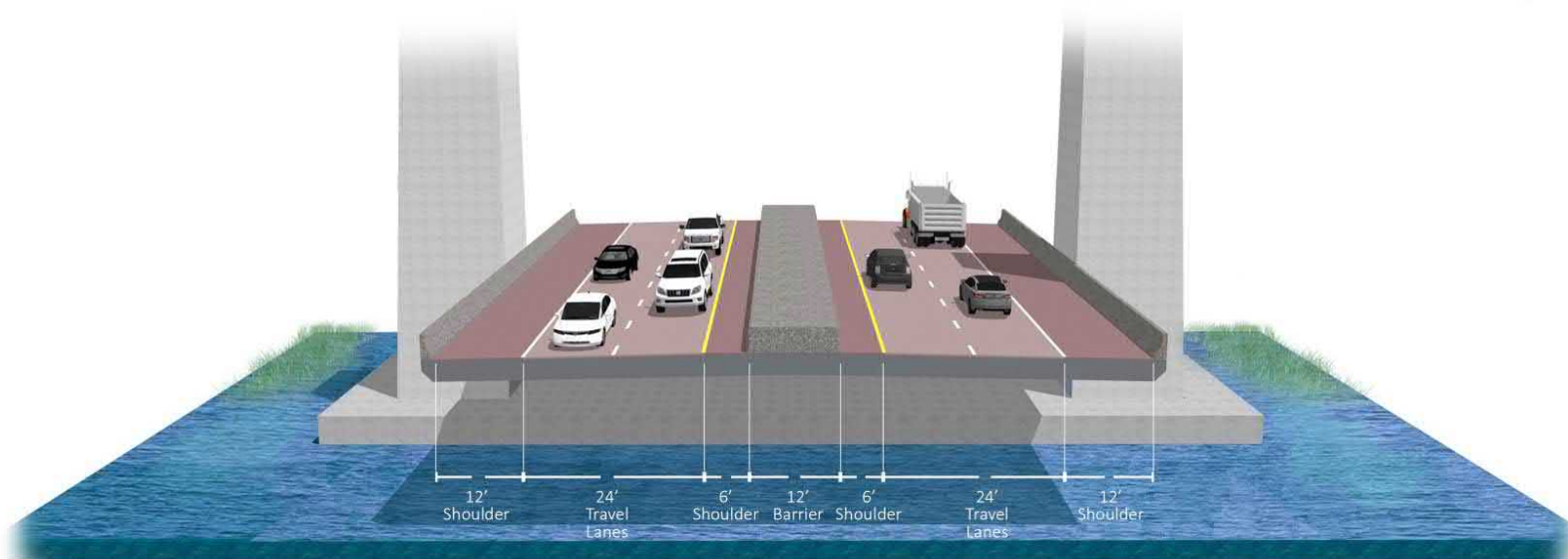


Figure 2-13: Current Detailed Study Alternatives Typical Section – Cape Fear River Bridge Crossing

3 AFFECTED ENVIRONMENT

This chapter describes the existing human, physical, cultural, and natural environments of the study area that could be affected by the proposed project. The inventory and evaluation of the existing environment presented in this chapter provides the necessary baseline from which to assess and document the potential impacts of the detailed study alternatives. Chapter 4 presents the potential environmental consequences of the proposed project.

3.1 Human Environment

Characteristics of the human environment in the project study area were examined and reported in the Cape Fear Crossing *Community Impact Assessment* (CIA) (NCDOT 2015a) and the *Land Use Scenario Assessment* (LUSA) (NCDOT 2015e).

3.1.1 Population Characteristics

Community-based demographic data were gathered from the 2010 US Census and the 2011-2015 ACS 5-year estimates (US Census Bureau 2015). Census data were gathered for all Census Block Groups that contain any portion of the project study area. These Block Groups are referred to as the demographic study area (DSA) (Figure 3-1). The following sections present a detailed analysis of this data.

3.1.1.1 Population Growth

According to the US Census Bureau, between 2000 and 2010 the population of Brunswick and New Hanover counties experienced population growth of 46.6 and 26.3 percent, respectively. Based on projections made by the North Carolina Office of State Budget and Management (NC OSBM), the upward trend of growth is expected to continue through 2035 for both counties (Table 3-1). The projected population growth in the two counties, coupled with physical indicators of recent growth observed within the project study area, indicate notable growth and development in the vicinity of the project.

Table 3-1: Population Trends and Forecasts

Area	Population				Growth		
	2000	2010	2020	2035	Difference (2000 to 2035)	Percent Change	Annualized Growth
Brunswick County	73,732	108,181	138,430	186,128	112,396	152.4%	4.4%
New Hanover County	160,944	203,289	234,826	278,612	117,668	73.1%	2.09%
North Carolina	8,081,986	9,574,408	10,584,376	12,167,836	4,085,850	50.6%	1.4%

Source: NC OSBM (2016).

3.1.1.2 Race/Ethnic Composition

The race/ethnic composition of the DSA, Brunswick County, New Hanover County, and North Carolina are compared in Table 3-2.

According to the 2011-2015 ACS, 29.2 percent of individuals in the DSA, 18.8 percent in Brunswick County, and 23.3 percent in New Hanover County identified themselves as part of a minority population.

Table 3-2: Population by Race/Ethnicity

Race	DSA		Brunswick County		New Hanover County		North Carolina	
	#	%	#	%	#	%	#	%
White	54,734	74.5%	96,724	83.4%	172,714	81.1%	6,839,831	69.5%
Black or African American	13,144	17.9%	12,524	10.8%	30,610	14.4%	2,115,338	21.5%
American Indian/Alaska Native	723	1.0%	449	0.4%	807	0.4%	116,143	1.2%
Asian	1,053	1.4%	741	0.6%	2,948	1.4%	244,076	2.5%
Native Hawaiian/Pacific Islander	372	0.5%	504	0.4%	110	0.1%	6,244	0.1%
Other Race	1,661	2.3%	2,593	2.2%	2,146	1.0%	292,310	3.0%
Two or More Races	1,759	2.4%	2,391	2.1%	3,756	1.8%	231,391	2.4%
Total	73,446	100.0%	115,926	100.0%	213,091	100.0%	9,845,333	100.0%
Total Hispanic	4,593	6.3%	5,620	4.8%	11,461	5.4%	869,908	8.8%

Source: US Census Bureau (2015), 2011-2015 ACS 5-year Estimates, Table B02001, "Race."

3.1.1.3 Limited English Proficiency

For many individuals living in the United States English is not their primary language. Individuals with a limited ability to read, write, speak, or understand English are considered to be limited English proficient (LEP).

According to the 2011-2015 ACS, 1,446 Spanish-speaking adults in the DSA speak English less than very well. This indicates a LEP population that meets the US Department of Justice (DOJ) LEP Safe Harbor threshold of 1,000 persons, or 5 percent of the DSA. In addition, the data indicate 381 LEP individuals speak other Indo-European languages and 357 LEP individuals speak Asian/Pacific languages within the DSA.

According to the Census data, in New Hanover County, LEP Block Groups are located along US 421 (Carolina Beach Road) between Front Street and US 117 (Shipyard Boulevard). In Brunswick County, an LEP Block Group is located north of US 17 between Grandiflora Drive, Lanvale Road, and Old Fayetteville Road.

3.1.1.4 Age Composition

Based on the 2011-2015 ACS, the approximate median age within the DSA is 40.7 years, compared to a median age of 50.0 years in Brunswick County, 37.8 years in New Hanover County, and 38.0 years for the state of North Carolina.

3.1.2 Housing Characteristics

The DSA contains an estimated 36,139 housing units according to the 2011-2015 ACS. The total housing units in the municipalities within the counties has risen since the 2000 and 2010 Censuses.

Approximately 48.5 percent of the housing in the DSA is owner-occupied. This compares to an owner occupancy rate of 46.5 percent for Brunswick County and 48.6 percent for New Hanover County.

Between 2000 and 2010, the number of housing units in the DSA increased by 41.7 percent, compared to 50.6 percent in Brunswick County and 27.4 percent in New Hanover County.

Based on the 2011-2015 ACS, the approximate median home value in the DSA is \$191,100, compared to a median home value of \$182,500 for Brunswick County and \$214,300 for New Hanover County.

3.1.3 Economic Characteristics

3.1.3.1 Business and Employment

The largest industries within Brunswick and New Hanover counties are ambulatory health care services; specialty trade contractors; professional, scientific, and technical services; motor vehicle and parts dealers; and nursing and residential care facilities.

Data from the 2011-2015 ACS indicate that approximately 62.6 percent of workers who reside in Brunswick County also work within the county, and 89.6 percent of workers who reside in New Hanover

County also work within the county. The mean commuting time for Brunswick County residents is 23.7 minutes, and the mean commuting time for New Hanover residents is 20.4 minutes.

According to the North Carolina Department of Commerce (2017), in the first quarter of 2017, the largest employers in Brunswick County were the Brunswick County Board of Education, Duke Energy Progress, and Brunswick County government, each with over 1,000 employees. The next largest employers were Walmart and Food Lion, with between 500 and 1,000 employees. The largest employers in New Hanover County were New Hanover Regional Medical Center, New Hanover County School System, University of North Carolina at Wilmington, Pharmaceutical Product Development, LLC, New Hanover County government, Cape Fear Community College, Cellco Partnership, and the City of Wilmington government, each with over 1,000 employees.

According to additional data from the North Carolina Department of Commerce (2017), employment in Brunswick County increased by 23.4 percent between 2000 and 2010, and increased by 9.5 percent between 2010 and 2015. Employment in New Hanover County increased by 9.6 percent between 2000 and 2010, and by 11.1 percent between 2010 and 2015. The state of North Carolina experienced a decline in employment of 2 percent between 2000 and 2010, but a 9.9 percent increase in employment between 2010 and 2015.

3.1.3.2 Income and Poverty Level

According to the 2011-2015 ACS, the median household income in Brunswick County is \$46,859, and the median household income in New Hanover County is \$50,088. Within the DSA, 20.1 percent of the population is living below the poverty level, a higher percentage than either Brunswick County (16.3 percent) or New Hanover County (17.7 percent) (Table 3-3).

Table 3-3: Percentage of Population Below Poverty Level

Area	Percentage Below Poverty Level
DSA	20.1%
Town of Belville	4.1%
Town of Leland	14.2%
City of Wilmington	23.3%
Brunswick County	16.3%
New Hanover County	17.7%

3.1.4 Community Facilities and Services

Community facilities are mapped on Figure 3-2 and are described in the following sections.

3.1.4.1 Parks and Recreational Facilities

No state or national parks or forests are located in the project study area. Several local parks, some developed or improved with Land and Water Conservation Funds (LWCF), are located within the project

study area (Table 3-4, Figure 3-2). Other recreational facilities in the project study area include the Wilmington Riverwalk along the Cape Fear River, the Gary Shell Cross City Trail, a paddle trail, and the Cape Fear National Golf Course in Brunswick Forest. Figure 3-2 depicts the locations of parks and recreational facilities in the project study area.

Table 3-4: Parks within the Project Study Area

Name	General Location	Owner/Operator	Description	Land and Water Conservation Funding
Brunswick Nature Park	Off of NC 133, north of Town Creek	Brunswick County Parks and Recreation Department	Kayak/canoe launch, picnic pavilion, hiking/biking trails	No
Riverwalk Park	Town of Belville, along Brunswick River	Brunswick County Parks and Recreation Department	Picnic shelters, river viewing dock, playground equipment, fishing pier	No
Dram Tree Park	Surry Street, near US 421 Bridge over the Cape Fear River	City of Wilmington	Boat ramp and kayak launch, parking; Section 6(f) resource	Yes
Halyburton Memorial Park	South 17th Street	City of Wilmington	Nature preserve, walking/biking trails, picnic shelters, playground equipment, community building	No
Greenfield Lake Park	US 421 and Lake Shore Drive	City of Wilmington	Paved pathway, amphitheater; Section 6(f) resource	Yes
Legion Sports Complex	North 3rd Street	City of Wilmington	6,000 seat stadium, home to the New Hanover High Wildcats, the Wilmington Sharks, the Wilmington Tigers, and Legion Post 10 baseball; Section 6(f) resource	Yes
Olde Towne Neighborhood Park	Town of Belville, near NC 133	Olde Towne Neighborhood Association	Picnic tables, volleyball courts, playground equipment, grills	No
Optimist Park	Front Street, near US 421 and Willard Street	New Hanover County	Baseball/softball fields	No
USS North Carolina Battleship Memorial Park	US 421 on the Cape Fear River	North Carolina Department of Cultural Resources	Battleship, museum/visitors center	No

Table 3-4: Parks within the Project Study Area

Name	General Location	Owner/Operator	Description	Land and Water Conservation Funding
Westgate Nature Park	On West Gate Drive, along Jackeys Creek	Town of Leland	Nature park with paved trails for hiking and biking, an elevated boardwalk, an outdoor classroom, playground, picnic area, and 150 acres of wetlands	No
E.P. Godwin Stadium	US 117, east of the Port of Wilmington	City of Wilmington	Baseball park	No

3.1.4.2 Cemeteries and Churches

The only known cemetery within the project study area is Greenlawn Memorial Park, located partially within the direct community impact area (DCIA). This cemetery opened in 1948 and comprises approximately 40 acres, directly northwest of the intersection of US 117 (Shipyard Boulevard) and 17th Street in Wilmington.

Fourteen churches were identified within or partially within the DCIA, including the following:

- Cape Fear Presbyterian Church
- Charismatic Episcopal Church
- Church of St. Peter the Fisherman
- Faith Baptist Church
- Freewill Holiness Church
- God's House of Praise
- Good Samaritan Church
- Greenfield Baptist Church
- Long Leaf Baptist Church
- New Life Christian Church
- Oak Grove Presbyterian Church
- River of Life Worship Center of Wilmington
- St. James African Methodist Episcopal Church
- The Lord's Church of Wilmington

3.1.4.3 Post Offices

No post offices were identified in the DCIA.

3.1.4.4 Schools

No Brunswick County or New Hanover County School System schools are located within the DCIA. One public charter school is located within the DCIA, the Cape Fear Center for Inquiry. The school teaches grades kindergarten through eighth grade. Acceptance to the school is based on a lottery system.

3.1.4.5 Police, Fire, and Emergency Services

The City of Wilmington is served by 11 City of Wilmington fire stations. Unincorporated areas of New Hanover County are served by the New Hanover County Fire Department.

Brunswick County Emergency Services provides fire and emergency management services service to all of Brunswick County and works with municipalities. Fire and rescue squads that serve the project study area include the Leland Volunteer Fire Station and Navassa Volunteer Fire Station. The Navassa Volunteer Fire Station is located outside of the project study area.

The locations of fire and emergency service stations are shown on Figure 3-2. Station 6 in New Hanover County and the Leland Volunteer Fire Station on NC 133 in Brunswick County are located within the DCIA.

3.1.4.6 Port of Wilmington

The Port of Wilmington is located within the project study area along the Cape Fear River. The Port is situated on the eastern bank of the Cape Fear River with a 42-foot deep navigation channel to provide access from the Atlantic Ocean. The Port of Wilmington is equipped to handle containerized, bulk, break-bulk, and specialized cargos. The Port is a foreign trade zone, and is one of the nation's strategic seaports. The Sunny Point military facility in Southport is the key ammunition shipping point on the Atlantic Coast for the Department of Defense (DOD) and is the only DOD terminal equipped to handle containerized ammunition, which are often routed through the Port of Wilmington. The Port of Wilmington is one of the few South Atlantic ports with readily available berths and storage for containers and cargo. CSXT provides daily service for boxcar, tanker, and general cargo services.

3.1.4.7 Neighborhoods

Brunswick County

Several residential neighborhoods, shopping centers, and business parks in Brunswick County abut US 17 from US 74/76 to Grandiflora Drive. The neighborhoods abutting US 17 include:

- The Willows
- Waterford
- The Arbors
- Magnolia Greens
- Brunswick Forest

Brunswick Forest is located on the south side of US 17 across from Lanvale Road. Brunswick Forest is a large mixed-use development that includes approximately 12,000 home sites and 300 acres of commercial land. The entrance includes commercial development such as restaurants, grocery stores, fitness centers, coffee shops, banks, and information centers for Brunswick Forest. The residential development features various styles and sizes of duplexes and single-family homes. The Cape Fear National Golf Course at Brunswick Forest is located south of the residential sites.

Several residential neighborhoods are located outside of the US 17 commercial corridor. Home sizes vary from modular homes to small and moderate single-family homes. These neighborhoods include:

- Grayson Park
- Hawkeswater
- Hearthstone
- Lanvale Trace
- Mallory Creek
- Olde Towne
- Planters Walk
- Snee Farm
- Southbend
- Spring Hill
- Stoney Creek
- Wedgewood at Lanvale

Much of the area outside of the DCIA in Brunswick County is zoned as rural residential and includes scattered single-family homes of various size and values.

New Hanover County

Areas within New Hanover County are more urban than in Brunswick County. A majority of the project study area within New Hanover County is within the City of Wilmington.

Existing neighborhoods in Wilmington vary in size and value. Within the Wilmington Historic District, there are no defined neighborhoods; however, the area is residential with scattered commercial development such as grocery stores, flea markets, restaurants, and local stores. There is minimal vacant land throughout the downtown area.

The Sunset Park Historic District is a residential neighborhood with older style homes and sidewalks throughout the district. Sunset Park is listed on the National Register of Historic Places (NRHP). Farther south along US 421, the area includes more commercial development such as restaurants, pharmacies, general businesses, and local destination businesses. Behind the commercial development are single-family residential areas; several areas include low-income, minority, and Hispanic populations. This area includes Bell Street, Cape Fear Boulevard, Worth Drive, and Long Leaf Mobile Home Park. On-street parking, sidewalks, and multimodal transportation choices are available.

Vacant land and residential development becomes more prominent farther south along US 421. Neighborhoods in the area include South Gate and Portwatch. South Gate is solely residential. Portwatch includes scattered single-family housing and industrial marine warehouses. Other industrial facilities in the area include Cape Fear Bonded Warehouse and National Gypsum. The area is currently zoned as residential and planned development.

Neighborhoods located outside of the DCIA, but within the project study area, include River Lights and Barclay West. River Lights is partially constructed and includes several single-family home lots. Barclay West is also partially constructed and located along 17th Street and Independence Boulevard. The community consists of 133 acres of office and institutional buildings, 84 acres of regional business, 72 acres of multi-family housing, and 4 acres designated for community business.

3.1.4.8 Community Cohesion

Throughout the field visit conducted in March 2015, several neighborhoods and residential areas showed indicators of community cohesion. Indicators include residential stability, economic stability, safety and health stability, community perceptions and identification, community connections, and community interactions. Additional details of community cohesion indicators are provided in the CIA (NCDOT 2015a).

Using the indicators listed above, three areas displayed all the factors of community cohesion. This included Brunswick Forest, Stoney Creek, and Snee Farm.

3.1.4.9 Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, directs that, “each federal agency make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health and environmental effects of its programs, policies, and activities on minority populations and low-income populations.” Disproportionately high and adverse effects on minority and low-income populations are defined as adverse effects that are:

- Predominately borne by a minority population and/or low-income population or
- Will be suffered by a minority population and/or low-income population and are appreciably more severe or greater in magnitude than the adverse effects that will be suffered by the non-minority population and/or non-low-income population

Based on demographic data available from the 2011-2015 ACS and guidance from the Council on Environmental Quality (CEQ), thresholds were used to determine the presence of Environmental Justice communities at the Block Group level. The thresholds are determined based on the percentage of minority and low-income, or below-poverty, populations living in the county. The standard of practice used for minority populations is 10 percentage points above the county average, or 50 percent, whichever is less; for low-income populations it is 5 percentage points above the county average, or 25 percent, whichever is less. For this project the minority threshold in Brunswick County was determined to be 28.8 percent and 33.3 percent in New Hanover County. The low-income threshold was

determined to be 21.3 percent for Brunswick County and 22.7 percent for New Hanover County. Figure 3-3 shows the location of the Block Groups that surpass the threshold for Environmental Justice communities. The Block Groups with minority and/or low-income populations exceeding county thresholds are also summarized in Table 3-5.

Table 3-5: Block Groups with Minority and/or Low-Income Populations Exceeding County Thresholds

Poverty	Below Poverty Level	Minority Population
CT 201.03, BG 1	17.5%	39.6%
CT 201.04, BG 2	37.7%	41.3%
CT 201.04, BG 3	25.1%	39.4%
CT 202.01, BG 2	15.9%	34.8%
CT 202.02, BG 2	22.2%	29.4%
CT 107, BG 1	22.9%	47.6%
CT 107, BG 2	33.2%	48.1%
CT 108, BG 1	44.1%	53.4%
CT 109, BG 1	20.1%	34.0%
CT 110, BG 1	77.0%	81.1%
CT 110, BG 2	35.8%	45.9%
CT 111, BG 1	28.6%	84.9%
CT 111, BG 2	53.4%	99.3%
CT 112, BG 2	29.4%	28.6%
CT 112, BG 3	35.2%	75.0%
CT 113, BG 1	23.1%	18.5%
CT 113, BG 2	51.8%	38.3%
CT 115, BG 2	22.2%	62.6%
CT 121.01, BG 3	31.7%	42.6%
DSA	20.1%	29.2%
Brunswick County	16.3%	18.8%
New Hanover County	17.7%	23.3%

Source: US Census Bureau (2015).

CT = Census Tract; BG = Block Group.

3.2 Land Use and Transportation Planning

Land use and transportation planning for the future land use study area (FLUSA) were studied in the *CIA* and *LUSA*. Much of the information presented in this section comes from the findings of these assessments (NCDOT 2015a and NCDOT 2015e). Plans updated or added since publication of the *CIA* and *LUSA* have been added to this section.

3.2.1 Land Use Plans

Local jurisdictions in the project study area include Brunswick County, New Hanover County, the City of Wilmington, and the Towns of Belville, Leland, and Navassa.

3.2.1.1 Existing Land Use

Belville, Leland, and Navassa are located within the western extents of the project study area. The land development patterns in this area are suburban and contain relatively low-density development, with the exception of higher density residential developments along US 17, adjacent to commercial development as discussed in Section 3.1.4.7. The eastern extent of the project study area is characterized primarily by a mix of dense commercial, industrial, and residential development. Eagle Island, a dredge dispersal island, is located in the middle of the project study area between the Cape Fear River and Brunswick River. The island is largely undeveloped containing brackish marsh areas. Scattered industrial development exists along the Cape Fear River, south of the Cape Fear Memorial Bridge.

The majority of the vacant or underutilized and developable land in the project study area is located to the west of NC 133 in Brunswick County. In New Hanover County, land surrounding Independence Boulevard is also largely vacant and developable.

3.2.1.2 Zoning Characteristics

The predominant zoning in Wilmington is residential, industrial, office and institutional, and community business. Industrial zoning is highly concentrated to the east of the Cape Fear River to complement uses at the Port of Wilmington. Along the US 421 corridor, the zoning is primarily community business and commercial service. To the west of the Brunswick River, land is predominately zoned residential with commercial zones and urban centers with general industrial areas along the US 17 corridor. Generalized zoning areas are shown on Figure 3-4.

3.2.1.3 Future Land Use

A region's land use plans and recent development activity are indicators of future land use. Both of these indicators were considered in the *LUSA*. The findings of that assessment are reproduced in this section (NCDOT 2015e).

Brunswick County CAMA Core Land Use Plan

The *Brunswick County CAMA Core Land Use Plan*, adopted in 2007 and recertified in 2011, was developed to address challenges that Brunswick County is currently facing, such as rapid population growth, influx of vacationers and retirees, rapid development, and scattered development, that is increasing the cost of county services. The plan notes that in a public information meeting in 2005 the public and Brunswick County officials identified a list of key issues with the first being an evacuation plan and the second being inadequate roads. The plan breaks down the land use of Brunswick County at the time of the plan. Within Brunswick County 80.2 percent of the land is vacant and 15.4 percent of the county is residential/agricultural (Brunswick County 2011).

The plan also notes that, while the county is predominantly vacant, it is one of the fastest growing counties in the state with growth being concentrated along the US 17, NC 87, NC 133, and NC 211 corridors. It notes specifically that US 17 is developing as a major commercial corridor. The proposed project is referenced in the plan as the Cape Fear Skyway and is noted as a project that could have a significant impact on land use within Brunswick County, with the proposed project, likely promoting a significant commercial node at the intersection of US 17 and NC 133, which currently has limited commercial development (Brunswick County 2011).

Plan NHC: Charting the Course, New Hanover County Comprehensive Plan

The *New Hanover County Comprehensive Plan*, adopted in 2016, was developed with the goal of fostering economic development and serving as a guide for creation of a new zoning ordinance. The plan notes a need for change in development patterns to encourage a denser, mixed-use style of land use. The plan states that 60 percent of New Hanover County is considered developed in some form: housing, commercial, industrial facility, or road network. The land cover map included in this plan shows the majority of land in the project study area is classified as medium and low intensity development (New Hanover County 2016).

The Belville Vision 2020 Plan

The study area for *The Belville Vision 2020 Plan* includes the Township of Belville with the primary corridors being US 17 and NC 133 and the interchange along US 74/76. The purpose of the plan is to outline specific land use parameters that will aid areas in achieving a balance between commercial and residential uses. The plan also notes the need to provide an internal transportation network that connects the area corridors. Land use in the town is predominantly low-density residential housing with limited commercial facilities and civic/public uses. The plan, however, notes that regional development patterns have focused on higher density, urban, commercial, and mixed-use development along the river, ocean shoreline, and primary transportation corridors. The plan includes a vision for the NC 133 South corridor, which includes improving the capacity of NC 133 while maintaining aesthetics as a gateway into Belville. The plan identifies the Cape Fear Crossing project as potentially being a dramatic impact to the area; however, it notes that due to the lack of funding, impacts would be far into the future. Improvements noted in the long-term plan include widening NC 133 between Belville Elementary School and the Cape Fear Crossing to a four-lane divided cross section with street trees and a multi-use path on each side (Town of Belville 2007).

Leland 2020 Master Plan

The *Leland 2020 Master Plan* is an update to the 2009 *Town of Leland Master Plan*. The plan is structured around actions the Town can take over the next five years that will best leverage long-term growth. focuses on immediate actions to best accommodate the rapid growth the region has experienced in the last decade. The plan focuses on development within community centers that promotes compact development patterns, reinvestment in existing neighborhoods, and investment in infrastructure and transit services. The plan also notes that transportation corridors link several neighborhoods or districts and connect various places within Leland, and strong corridors link and buffer

neighborhoods from traffic by lining busy streets with buildings and civic spaces. While the Cape Fear Crossing Project is not discussed in the plan, it is noted on a Framework Plan map as “Proposed I-140” (Town of Leland 2016).

Leland CAMA Land Use Plan Update

The *Leland CAMA Land Use Plan*, updated in 2011, was developed to serve as part of a broader comprehensive planning process. The plan notes the need to limit the strip effect of commercial development along US 17 and encourage development that is environmentally sensitive and aesthetically pleasing. Public input has consistently supported the community’s desire to develop a traditional mixed-use town center along Village Road. The Cape Fear Crossing project is identified in the Community Facilities section and Future Land Use Policy Framework of the plan. Here the project is noted as being incompatible with the natural systems and existing and planned land use (Town of Leland 2011).

Create Wilmington Comprehensive Plan

The *Create Wilmington Comprehensive Plan* notes that infill development and optimizing existing development will be critical to the well-being of the community and that balancing the need for open space and a well-designed built environment will be key to future development. The largest land use in Wilmington is currently low-density single-family residential. A large portion of the land within the project study area in Wilmington is designated as an area of opportunity for higher density development. The plan notes the need to relieve development pressures on outlying rural areas and prioritize compact, urban development within the city. The plan also ties together land use and transportation, stating Wilmington should work to reduce motor VMT, improve air quality, and encourage growth within and along mixed-use centers and major road corridors (City of Wilmington 2016).

Leland Gateway Infill Plan

The *Leland Gateway Infill Plan* places a strong emphasis on connectivity as a requirement for development both within the community and as a region. The plan notes the goal of developing a town center that is pedestrian, bicycle, and family-friendly. The land use within Leland north of US 17 is zoned as urban center and general urban open along Village Road. The area to the north of the US 17 and Village Road interchange is identified as an ideal location for redevelopment as a walkable downtown. The plan focuses on the area north of US 17 surrounding NC 133 and does not specifically identify the Cape Fear Crossing project (Town of Leland 2012).

Monkey Junction Plan

Monkey Junction was designated as an area for targeted growth in the *New Hanover County Comprehensive Plan* (New Hanover County 2016). A small area plan will be developed for this area in order to provide detailed information and guidance on how to meet the needs of the community. The scope of the study overlaps with the southeastern portion of the project study area. The study has not yet been conducted but should be considered as the Cape Fear Crossing project progresses.

Cape Fear: A Regional Framework for Our Future

Cape Fear: A Regional Framework for Our Future, adopted in 2015, provides a summary of key challenges facing the Cape Fear region, strategies to address those challenges, and a blueprint for regional action. This was a cooperative regional plan funded through a grant received by the consortium of local governments through the Housing and Urban Development initiative. Affordable housing, traffic congestion, job opportunities, and protection of the natural environment are listed as key local concerns that should be considered as the region continues to grow. The plan encourages the adoption of more compact development patterns in order to promote economic development while also preserving agricultural land. The plan states that the current degree of dispersed growth has and will continue to place development pressures on rural areas and prove taxing on existing roadway networks. The need to provide more transportation choices is included as a key principle in the development of “complete communities.” This encourages the development of safe, reliable, and economical transportation choices to promote affordable transportation, decreased fuel dependence, better air quality, and public health-oriented transportation options. The plan encourages a strong mix of transportation options that work to provide additional capacity for the region. The plan identifies several strategies, including connecting the region’s destinations, workforce, and jobs more effectively by adding a fourth river crossing of the Cape Fear River (FOCUS 2015).

Wilmington Vision 2020: A Waterfront Downtown

Wilmington Vision 2020: A Waterfront Downtown seeks to more fully connect downtown Wilmington and the Cape Fear River by developing a waterfront downtown that is an inviting mixed-use destination where people live, work, learn, visit, and play. The plan states the goals of increasing the downtown population, housing units, jobs, hotel rooms, and utilized parcels. Downtown Wilmington is located just north of the project study area but relies on transportation corridors included in the proposed project to connect downtown with the surrounding region. US 421 is noted as the primary arterial from the south. The plan also notes that the Central Business District is flanked by two bridges, the Isabel Holmes Bridge to the north and the Cape Fear Memorial Bridge to the south (City of Wilmington 2004b).

Southside Small Area Plan: A Plan for the Dry Pond, The Bottom, and Lake Forest Neighborhoods

The *Southside Small Area Plan*, adopted in 2009, overlaps with the northeastern portion of the project study area. The plan notes that roadways such as US 17 Business, US 421, US 76, and South 3rd Street are essential to the regional transportation system but have a level of traffic that can disrupt the largely residential areas. The plan encourages mixed-use development that would be small-scale enough to not infringe on surrounding residential areas. A lack of sidewalks and bicycle lanes, insufficient street lighting, and inadequate stormwater drainage are all included as key infrastructure issues for the area included in the plan. The plan’s objective is improving transportation infrastructure to accommodate safe vehicular travel, access to public transit, and non-vehicular alternatives (City of Wilmington 2009a).

Hillcrest/Dry Pond Neighborhood Transformation Plan

The *Hillcrest/Dry Pond Neighborhood Transformation Plan* pertains to residential communities in the northeastern portion of the project study area (Wilmington Housing Authority 2010). The Hillcrest community consists of 256 public housing units that have been occupied since 1941. The plan seeks to improve neighborhood connectivity, increase access to public transportation, improve access to jobs, increase park and open green space, accommodate bicycle and pedestrian travel, and maximize infill development. The plan states that upon completion the Hillcrest and Dry Pond neighborhood will be transformed into a more environmentally sustainable community with the construction of 512 new housing units that meet Leadership in Energy and Environmental Design certification requirements.

3.2.1.4 Available Land

Within the FLUSA, approximately 41.1 percent of the land is considered vacant or underutilized and available for development, as shown on Figure 3-5. Developable land only includes undeveloped parcels and does not include protected lands such as public parks, managed lands for conservation and public space, land owned by NCSPA, and military lands, nor does developable land include transportation right-of-way, waterways, or floodways. Wetlands and Voluntary Agricultural Districts (VADs) are both present within the FLUSA and are not excluded from the land considered developable.

3.2.1.5 Development Pressure

New Hanover County

The portion of the FLUSA in New Hanover County is composed mostly of a built-out Central Business District of the City of Wilmington and higher density residential and industrial development surrounding the Port of Wilmington.

Between March 2013 and September 2014, Wilmington Business Development announced the creation of 835 new jobs and more than \$200 million in annual payroll (Wilmington Business Development 2014). In addition, Vertex Rail Technologies announced the creation of 1,342 manufacturing jobs in the City of Wilmington expected to yield \$1.1 billion in annual economic impact on the City of Wilmington and the greater region (Wilmington Business Development 2014). According to the 2011-2015 ACS the total employment increase in Brunswick and New Hanover counties from 2010 through 2015 was 4.8 percent and 5.9 percent, respectively.

Port of Wilmington

The Port of Wilmington receives, on average, one ship a day and a barge every two months. Imports include chemicals, grains, fertilizers, cement, and chemicals. The leading exports are forest products, woodchips, wood pulp, food, and general merchandise (NCDOT 2017d). The Port of Wilmington is expanding to accommodate multiple post-Panamax container ships simultaneously and to increase the speed and efficiency of loading and unloading these vessels (NCSPA 2017).

Total tonnage through the Port of Wilmington has more than doubled from two million tons in 2002 to about four million tons in 2016. Most of the tonnage is accounted for in containers (52 percent in 2016).

Container traffic through the port has increased drastically in the past 15 years, expanding from 91,000 TEUs in 2002 to 284,000 TEUs in 2016 (NCDOT 2017d).

Currently, the only vertical constraint between the Atlantic Ocean and the Port of Wilmington is the Duke Progress Energy 230 kilovolt dual transmission line that crosses the Cape Fear River south of the port. The transmission line creates a vertical constraint to shipping traffic of 165 feet from mean high water (MHW). The Port of Wilmington's ability to attract vessels with air drafts exceeding 165 feet is limited due to restrictions from this transmission line. According to local shipping agents and vessel logs from the NCSPA, the largest vessels that use the Port of Wilmington on a consistent basis are operated by the Yang Ming Marine Transport Corporation. Up to eight Yang Ming vessels call the Port of Wilmington every 60 days, and average 140 to 158 feet of air draft. Officials from Yang Ming indicate that future vessels added to the fleet likely would not exceed 160 feet of air draft. Some of the largest cruise ships in operation have air drafts in excess of 200 feet, but cruise lines are infrequent at the Port of Wilmington.

The *North Carolina Statewide Multimodal Freight Plan: Maritime Profile* (NCDOT 2017d) notes that at-grade rail/roadway crossings are a restriction for the port. The report notes it is common to see trucks bound to and from the port lined up along access roads waiting for trains to move over the crossings. The report also notes that a major restriction for the port is vertical clearance due to the elevation of overhead powerlines.

Brunswick County

Development in Brunswick County within the project study area has previously followed a traditional pattern of corridors with strip malls and less dense development throughout the area. Future plans focus on "in-fill" development that will increase density throughout the project study area. A large mixed-use development, Brunswick Forest, illustrates a development trend of rapid residential development with 12,000 planned home sites and 300 acres of commercial land in the project study area.

According to the *Town of Leland Master Plan* (Town of Leland 2009), the Town of Leland benefits from its proximity to the City of Wilmington. Given the socioeconomic levels, quality of life, political factors, and its coastal location, the population growth and development pressure in the Town of Leland, as well as the region as a whole, are expected to continue.

The Town of Leland recently adopted a Flex Code that breaks down areas around Village Road (NC 133 north of US 17) into walkable "zones" to help create a more walkable and traditional downtown. The main focus of this new plan is the Town's Gateway District, just north of the intersection of Village Road (NC 133) and US 17. As discussed in *Connecting Northern Brunswick County*, this district is one of the main focuses of future urban development, residential infill, and job growth in the area (WMPO 2013b).

According to the *Town of Leland Master Plan* (Town of Leland 2009) extensive residential growth on either side of US 17 occurred between 1990 and 2005, with large areas of undeveloped land south of the highway proving to be attractive for future residential development. Large-scale development in

Leland began when the Magnolia Greens, Waterford, and Westgate developments were de-annexed from Belville.

Representatives from the Town of Leland and the City of Wilmington indicated that most residential and commercial growth in the project study area would likely occur along the US 17 corridor between Lanvale Road and US 74/76, the Village Road corridor, the NC 133 corridor, and the US 421 (River Road) corridor.

3.2.2 Transportation Plans

Several transportation plans exist for the project study area, including highway, transit, bicycle and pedestrian, and freight plans.

3.2.2.1 Highway Plans

State Transportation Improvement Program Plans

The Strategic Transportation Investments (STI) law, passed in 2013, allows NCDOT to use its funding more efficiently and encourages thinking from a statewide and regional perspective while working to meet local needs. STI established the Strategic Mobility Formula, which uses data-driven scoring and local input to develop NCDOT's STIP and prioritize projects. The proposed project is included as project number U-4738 in NCDOT's 2018-2027 STIP. STIP projects in and around the proposed project are listed in Table 3-6. The general locations of the STIP projects are shown on Figure 3-6.

Table 3-6: Other STIP Projects in the Vicinity of the Project Study Area

STIP No.	Type	Description	Schedule – Fiscal Year
R-2633BA	Transition	I-140/US 17 (Wilmington Bypass): US 74/76 east of Malmo in Brunswick County to SR 1430 (Cedar Hill Road)	Complete
R-3601	Transition	US 17/US 74/76: NC 133/SR 1472 (Village Road) Interchange to the US 421/NC 133 Interchange. Add additional lanes on north and southbound lanes and widen Bridge 090107 and Bridge 090108.	Complete
U-3338B	Transition	SR 1175 (Kerr Avenue): Randall Parkway to US 74 (Martin Luther King Jr. Parkway) in Wilmington. Widen to multi-lanes.	Under construction.
U-3338C	Regional Highway	SR 1175 (Kerr Avenue) interchange at US 74 (Martin Luther King Jr. Parkway)	Right-of-way: In Progress Construction: 2020
U-4902B	Regional Highway	US 17 Business (Market Street): Colonial Drive to Martin Luther King Jr. Parkway. Access management improvements.	Right-of-way: In Progress Construction: 2019

STIP No.	Type	Description	Schedule – Fiscal Year
U-4902C	Statewide Highway	US 17 Business (Market Street): Martin Luther King Jr. Parkway to Station Road. Access management improvements.	Right-of-way: In Progress Construction: 2019
U-5702A	Statewide Highway	NC 132 (College Road): SR 2048 (Gordon Road) to US 117 (Shipyards Boulevard). Access management and travel time improvements.	Right-of-way: 2022 Construction: 2024
U-5702B	Statewide Highway	NC 132 (College Road): US 117 (Shipyards Boulevard) to US 421 (Carolina Beach Road). Access management and travel time improvements.	Right-of-way: Unfunded Construction: Unfunded
U-5731	Regional Highway	US 74: US 17/421. Construct a fly-over and free flow ramp at interchange.	Right-of-way: 2020 Construction: 2022
U-5734	Regional Highway	US 421 (South Front Street): US 17 Business/76/421 (Cape Fear Memorial Bridge) to US 421 (Burnett Boulevard). Widen to multi-lanes.	Right-of-way: 2021 Construction: 2023
U-5790	Division Highway	US 421 (Carolina Beach Road): NC 132 (South College Road) to Sanders Road. Widen existing roadway and construct flyovers at US 421 and NC 132.	Right-of-way: 2022 Construction: 2024
U-5792	Division Highway	US 74 (Martin Luther King Jr. Parkway): US 117/NC 132 (College Road). Convert at-grade intersection to interchange.	Right-of-way: 2022 Construction: 2024
U-5863	Regional Highway	NC 133 (Castle Hayne Road): I-140/US 17 (Wilmington Bypass) to SR 1310 (Division Drive). Widen to multi-lanes.	Right-of-way: 2021 Construction: 2023
U-5869	Division Highway	US 17 Business: US 17 (South 17th Street) to Covil Avenue. Construct a road diet.	Right-of-way: 2024 Construction: 2025

Cape Fear Transportation 2040: A Metropolitan Transportation Plan

The 2040 MTP was adopted in 2015. The plan projects funding availability for a portion of the project by 2040, and indicates that the inclusion of a tolling component could enhance the project schedule. In addition to prioritizing the project for its impact to the overall roadway network, the 2040 MTP particularly notes the anticipated impact the Cape Fear Crossing project will have as a priority project for improving freight movement via truck in the WMPO area. The plan includes an overview of the alternatives for the proposed project in its appendices (WMPO 2015a).

Congestion Management Process/2016 Biennial Data Report

The Congestion Management Process was adopted in 2013 to establish performance measures for evaluating and monitoring system performance (WMPO 2013a). The *2016 Biennial Data Report* (WMPO 2016a) uses the adopted Congestion Management Process to evaluate corridors for community-

established congestion metrics to include travel time, safety, volume, and transit performance. The *2016 Biennial Data Report* identified seven corridors in the project study area as some of the most congested corridors in the WMPO region and identified the following strategies to mitigate congestion:

- Carolina Beach Road corridor (Alabama Avenue to College Road) was identified as the third most congested corridor in the region. Strategies to mitigate congestion on this corridor include accommodating all modes in new development, constructing a supportive collector street network with new development, increasing fixed-route public transit frequency, expanding the pedestrian and bicycle networks, improving multimodal access at intersections, developing access management strategies, and implementing geometric improvements at key intersections.
- Shipyard Boulevard corridor (River Road to College Road) was identified as the sixteenth most congested corridor in the region. Strategies to mitigate congestion on this corridor include accommodating all modes in new development, constructing a supportive collector street network with new development, increasing fixed-route public transit frequency, utilizing mixed-use areas designed to maximize access to public transit, and developing access management strategies.
- Ocean Highway corridor (Lanvale Road to US 74/76 Andrew Jackson Highway) was identified as the twenty-third most congested corridor in the region. Strategies to mitigate congestion on this corridor include improving usage of alternate roadways to minimize demand on this corridor, constructing a supportive collector street network with new development, increasing fixed-route public transit frequency, improving multimodal access at intersections, and establishing park and ride networks.
- Village Road/NC 133 corridor was identified as the twenty-fourth most congested corridor in the region. Strategies to mitigate congestion on this corridor include improving usage of alternate roadways to minimize demand on this corridor and expanding the pedestrian and bicycle networks.
- US 74/76 corridor (Maco Road to NC 133) was identified as the twenty-fifth most congested corridor in the region. Strategies to mitigate congestion on this corridor include improving usage of alternate roadways to minimize demand on this corridor, developing access management strategies, and converting key existing intersections to interchanges.
- Front Street corridor (Lake Shore Drive to Cape Fear Memorial Bridge) was identified as the twenty-seventh most congested corridor in the region. Strategies to mitigate congestion on this corridor include improving usage of alternate roadways to minimize demand on this corridor, improving signage to better inform traffic of route options and operations, and adding general purpose lanes for increased capacity.
- 3rd Street corridor (Kentucky Avenue to Wooster Street) was identified as the twenty-eighth most congested corridor in the region. Strategies to mitigate congestion on this corridor include improving usage of alternate roadways to minimize demand on this corridor, increasing fixed-route public transit frequency, and improving signage to better inform traffic of route options and operations.

Wilmington MPO Comprehensive Transportation Plan

The *Wilmington MPO Comprehensive Transportation Plan* was adopted in 2015 and includes the project study area in its highway map but notes that no final alternative alignment had been chosen at the time

of the adoption of the *Comprehensive Transportation Plan* (WMPO 2016b). The *Wilmington MPO Comprehensive Transportation Plan* contains maps with recommended long-term improvements divided by mode. On the Public Transportation and Rail Map, new rail facilities are recommended parallel to the Cape Fear Crossing project, along the Cape Fear Memorial Bridge, and along US 421 going north in New Hanover County towards Pender County. The Bicycle Map and Pedestrian Map include recommended facilities or improvements throughout the entire project study area. The Highway Map includes the entire Cape Fear Crossing study area since an alternative has not been selected; however, new connections are recommended between US 17 and NC 133 north of Jackeys Creek. Other recommendations from the Highway Map that fall within the project study area include proposed interchanges at NC 133 and Rabon Way, US 17 and US 74/76, US 17/74/76 and NC 133, and US 421 and US 74/76. Finally, the Highway Map recommends the following facilities within the project study area as needing improvement: US 17, NC 133, Old Fayetteville Road, Village Road, US 421 (Carolina Beach Road), Dawson Street, Wooster Street, US 421 (Front Street), US 117 (Shipyard Boulevard), and Independence Boulevard.

The Belville Vision 2020 Plan

The Belville Vision 2020 Plan was adopted in 2007 and refers to the proposed project as the Skyway Project. In order to improve transportation mobility and circulation, the plan suggests constructing interconnected collector street networks in three areas: along NC 133 (River Road), at Ploof Road/Blackwell Road, and at the Lincoln Business Park (just north of US 17). Issues such as high volumes and crash rates at the NC 133/US 17 interchange are also referenced in the plan. It is proposed that this interchange should be upgraded and all new collector streets should provide facilities for bicyclists and pedestrians. The plan focuses on the importance of connecting NC 133 to the Skyway and states this connectivity will dramatically impact the area. The plan also states maintaining the overall aesthetics of NC 133 as a gateway to Belville and southern Brunswick County should be a high priority (Town of Belville 2007).

River Road Small Area Plan

The *River Road Small Area Plan* was adopted by WMPO in 2007. The plan refers to the proposed project as the Cape Fear Skyway and describes the project as a proposed freeway that will connect US 17 to the Independence Boulevard/Carolina Beach Road intersection and require a bridge over the Cape Fear River. Other transportation recommendations within the project study area include the widening of River Road to four lanes, access management and coordinated traffic signal improvements along Carolina Beach Road, the addition of interconnected collector streets south of Independence Boulevard, and intersection improvements along River Road at Independence Boulevard (WMPO 2007b).

Dawson & Wooster Corridor Plan

The *Dawson & Wooster Corridor Plan*, adopted in 2007, refers to the proposed project as the Cape Fear Skyway. Given the construction of the Skyway, the plan encourages NCDOT to work with the City of Wilmington to determine whether converting the Dawson and Wooster corridors to two-way operation is feasible and desirable. Most of the recommended improvements in the plan lie north of the project

study area along the Dawson and Wooster corridors and focus on streetscape, bicycle, pedestrian, and transit operations along these two corridors. The plan also notes that the future of the corridor is directly tied to the future of the fourth crossing of the Cape Fear River (WMPO 2007a).

US 17/NC 133 Collector Street Plan

The *US 17/NC 133 Collector Street Plan* was adopted in 2005. The plan refers to the proposed project as the Cape Fear Skyway and notes the project brings the possibility of better access to and through the region. The plan notes that Brunswick County and the Town of Leland are growing rapidly and cites the need to develop a network of existing and future interconnected, paved streets that will accommodate vehicles, bicycles, buses, and pedestrians. A map is provided to show where future street connections should be considered between US 17 and NC 133 with an average street spacing of 3,200 feet. Along with this map, the plan includes a note that these are not project recommendations with exact alignments, but suggestions for interconnectivity of collector streets that developers should consider during the land development process. This map also shows a tentative alignment for the “Wilmington Bypass” with an interchange connecting to an extension of Lanvale Road between US 17 and NC 133 (WMPO 2005b).

Carolina Beach Road Corridor Plan

The *Carolina Beach Road Corridor Plan*, adopted in 2004, provides strategies to make Carolina Beach Road (US 421) less congested and more attractive. The plan also addresses the need to strengthen the economic and commercial development along the corridor. The plan notes that during the community input process a lack of quality development, particularly along major roads, was consistently listed as the greatest concern. The plan encourages future development along this corridor to be held to high standards that promote efficient transportation and high-quality developments along the corridor (City of Wilmington 2004a).

Cape Fear Historic Byway Corridor Management Plan

The *Cape Fear Historic Byway Corridor Management Plan* includes improvement and action plans for a corridor located within the project study area north of Shipyard Boulevard. The corridor includes 3rd Street, South 5th Avenue, North Front Street, South Front Street, and Water Street. The plan outlines goals for the byway such as encouraging visitors to travel via means other than the automobile, raise awareness of historic structures, increase perception of safety at Greenfield Lake Park and Gardens, improve water quality at Greenfield Lake Park, promote community connectivity along the corridor, and increase pedestrian and cyclist safety along the byway, particularly on 3rd Street. The plan includes extending Wilmington Riverwalk to Cape Fear Memorial Bridge and Isabel Holmes Bridge as a medium priority bicycle and pedestrian improvement. The plan also includes streetscaping efforts such as sidewalk bulb-outs, decorative lighting, mast arm signals, and increased tree canopy along 3rd Street and 5th Avenue (WMPO 2008).

3.2.2.2 Transit Plans

Transit Needs Study for the Wilmington Multi-Modal Transportation Center

Adopted in 2009, the *Transit Needs Study for the Wilmington Multi-Modal Transportation Center* represents the latest stage in the development of the Wilmington Multi-Modal Transportation Center. The goal of this center is to provide a transportation center that works well for riders and transportation agencies and provides for current and future transportation needs. The study identifies US 17, US 74, US 76, US 421, and NC 133 as potential future transit routes. This study looked at the City of Wilmington's current needs and plans and the city's potential for growth (WMPO 2009).

Wave Short Range Transit Plan

The *Wave Short Range Transit Plan* (Cape Fear Public Transportation Authority 2012) is a strategic plan focusing on the transit system's development over five years in terms of operating and capital improvements. The plan provides a strategy to improve services within the framework of the existing budgets and includes identification of service needs, gaps, and opportunities; a review of existing service performance and productivity; recommendations on service charges that will improve service; and financial and capital plans for implementation. The plan found that Wilmington beaches and the northeast area of Wilmington are underserved areas. More frequent service and later service hours were preferred by study participants, and walking conditions to and from transit stops were a major concern to respondents.

3.2.2.3 Bicycle/Pedestrian Plans

Town of Leland Pedestrian Plan

The *Town of Leland Pedestrian Plan* identifies the need for sidewalks, crosswalks, and multi-use paths throughout the Town of Leland and especially connecting neighborhoods, schools, and commercial areas. The plan particularly cites US 17 as a high-volume, high-speed, multi-lane divided roadway that does not incorporate safe pedestrian crossing despite the presence of pedestrian generators such as Walmart and Harris-Teeter. The plan states that pedestrians are crossing the road and recommends the construction of multi-use paths along US 17 and safe pedestrian crossing facilities at key intersections. Other recommendations within the southwestern portion of the project study area include the development of robust sidewalk networks within each of the neighborhoods north and south of US 17 with multi-use paths connecting between future US 17 pedestrian facilities at each of the signalized intersections and terminating at Westgate Nature Park. A multi-use path is proposed between Westgate Nature Park and Brunswick Nature Park, and between the neighborhoods south of US 17. In the northern part of the DSA, the plan recommends multi-use paths along Lanvale Road and Old Fayetteville Road connecting neighborhoods to Leland's future Gateway District and community schools. The multi-use paths south of US 17 fall within the Alternative Q, T, and B study areas (Town of Leland and NCDOT 2016).

Comprehensive Bicycle Plan for Leland, NC

Adopted in 2008, the *Comprehensive Bicycle Plan for Leland, NC* includes US 17 as a major focus area and states the Cape Fear Skyway (now Cape Fear Crossing) must accommodate cyclists who wish to travel in the east-west direction through the area, preferably through the provision of service roads and multi-use paths that do not require cyclists to use US 17. The plan also states the facility should accommodate cyclists who wish to access the commercial developments along US 17 (Town of Leland 2008).

Walk Wilmington: A Comprehensive Pedestrian Plan

Walk Wilmington was adopted by the Wilmington City Council in 2009. This plan cites US 17 Business, US 74, US 76, US 117, US 421, and NC 133 as major arterials within the city that are included in the project study area. River Road is designated for the inclusion of a mid-term sidewalk project, while Shipyard Boulevard and Carolina Beach Road (US 421) have segments classified for the inclusion of both mid-term and short-term sidewalk projects. Independence Boulevard is noted as a planned corridor for a multi-use path (City of Wilmington 2009b).

Move. Play. Connect. The Wilmington/New Hanover County Comprehensive Greenway Plan

The Wilmington/New Hanover County Comprehensive Greenway Plan, adopted in 2013, includes proposed trails along roadways within the project study area. Several trails are proposed within the detailed study alternative corridor limits to include a trail proposed along Shipyard Boulevard, a trail proposed along Independence Boulevard, a trail proposed to connect “west on future Skyway Bridge,” and a trail proposed along a segment of River Road in the southern portion of the project study area (City of Wilmington 2013a).

Gary Shell Cross-City Trail Master Plan

The *Gary Shell Cross-City Trail Master Plan* includes the proposed future East Coast Greenway Alignment, which includes a multi-use path around the perimeter of Greenfield Lake that extends down South 17th Street and Independence Boulevard. A pedestrian path is also proposed along 3rd Street. The plan makes alternative, active modes of transportation a priority for the city (City of Wilmington 2012).

River to the Sea Bikeway Master Plan

The *River to the Sea Bikeway Master Plan*, adopted in 2013, lays out the plans and goals of the River to the Sea Bikeway. The bikeway is meant to connect downtown Wilmington and Wrightsville Beach. The portion of the River to the Sea Bikeway in downtown Wilmington is located in the northern portion of the project study area along Ann Street and Castle Street. The connection between downtown and the beach is meant to provide new opportunities for commuting and access to employment, retail, cultural, educational, and recreational sites in Wilmington and New Hanover County as a whole (City of Wilmington 2013b).

3.2.2.4 Freight

Strategic Plan of the North Carolina State Ports Authority

The *Strategic Plan of the North Carolina State Ports Authority* identifies four high-priority, near-term goals. These include doubling the container business to more than 530,000 TEUs, expanding business on the general terminals by four million tons; executing an investment plan for needed terminal, road, rail, and channel infrastructure to support growth goals; and achieving financial stability to independently fund capital growth requirements. The plan notes that low historical rail freight volumes to Wilmington have resulted in high per-unit rail costs, making rail transport less competitive than truck transport within the region and state. The plan also notes the need for the Port of Wilmington to make improvements to the port's intermodal rail access to compete to attract cargo that is currently moving through other facilities in the Mid and South Atlantic regions. For future development, the Strategic Plan states the development of a service like a modern, scalable rail to ship transload complex would be an ideal approach (NCSA 2015).

Wilmington Rail Realignment and Right of Way Use Alternatives Feasibility Study

The *Wilmington Rail Realignment and Right of Way Use Alternatives Feasibility Study* presents a high-level study of two separate but linked projects. These include the development of a new rail corridor and realignment of the freight traffic to this corridor to provide a more direct route to Navassa, and reconfiguration of the existing tracks to provide a path for a heritage trolley or similar light rail transit within the city. The existing CSXT rail alignment traverses in a "V" shape through the city. The proposed relocation of the freight rail corridor from the City's urban core to Eagle Island would change the land use within the new rail corridor to a transportation use if the rail relocation were implemented. Furthermore, the proposed relocation of a line that supports the Port of Wilmington would be expected to improve the efficiency of egress and ingress by providing more direct rail access to the Port. The Cape Fear Crossing project is included as a proposed highway that would improve traffic and enhance freight movement to and from the Port in southern New Hanover County to US 17 and I-40 in Brunswick County. The proximity of the Carolina Connector Intermodal hub, which is currently in development near Rocky Mount, will likely increase intermodal freight moves from the port once it is completed (WMPO 2017c).

Wilmington Rail Improvements – Landside Rail Improvements Serving the Port and Moving Trains Safely through the Community

Wilmington Rail Improvements – Landside Rail Improvements Serving the Port and Moving Trains Safely through the Community presents additional perspectives for integrated rail and port improvements that would improve safety, capacity, and efficiency of the rail system within the City of Wilmington and on Port of Wilmington property in the near term to meet increased freight and shipping demands. NCSA has established a goal to increase container traffic by rail to 25 percent of total freight shipped through the port by the year 2025, which would minimize the impact of projected volume increases on roadways in Wilmington. The report's long-range rail improvements within Wilmington also include the removal of at-grade crossings and a new rail bridge across the Cape Fear River (WMPO 2017b).

3.2.3 Coastal Management Plans

3.2.3.1 Wilmington—New Hanover County Joint Coastal Area Management Plan 2006 Update

The *Wilmington—New Hanover County Joint Coastal Area Management Plan* states the New Hanover area infrastructure system should work to meet the needs of the economy and provide a high level of service to a growing population in a fiscally responsible manner. The plan also states a goal that highways will meet the appropriate levels of service, scheduled plans will be ahead of anticipated growth patterns, and there will be an inter-modal transportation system serving the county, state, and region. The Management Plan cites US 74/76, US 421, and US 17 as freeways that are meant to provide rapid and efficient movement for large volumes of through traffic between areas and across the urban areas. Independence Boulevard is cited as a minor thoroughfare meant to collect traffic from local streets and carry it to the major thoroughfare system (City of Wilmington 2006).

3.2.3.2 Brunswick County CAMA Core Land Use Plan

The *Brunswick County CAMA Core Land Use Plan*, which was adopted in 2007 and recertified in 2011, states that US 17 is developing as a major commercial corridor for the region. The Cape Fear Skyway is mentioned as a project that could have significant impact on the land use within Brunswick County. The plan states the construction of the Cape Fear Skyway (now Cape Fear Crossing) would improve access to Brunswick County, improve access to the port located on the eastern side of the river, and provide a new gateway to the city from the west (Brunswick County 2011).

3.2.3.3 Leland CAMA Land Use Plan Update

The *Leland CAMA Land Use Plan Update* was developed to serve as part of a broader comprehensive planning process that has been underway in Leland since 2005 (Town of Leland 2011). Even with increases in commercial and business developments, Leland has remained predominantly residential, so employment, shopping, and entertainment opportunities often require a trip to New Hanover County. The Cape Fear Memorial Bridge and US 17-74-76 are cited in the plan as the top traffic volume locations in the Wilmington Urban Area Metropolitan Planning Area. The plan notes that the Town Council has actively pursued prioritizing the widening of the causeway between Leland and the Cape Fear Memorial Bridge. The plan states that the town supports the widening of the Cape Fear Memorial Bridge, but would prefer two travel lanes added on each side rather than one on each side. The plan notes that the Town Council has strong concerns about some of the original alignments considered for the Cape Fear Crossing. The plan describes the construction of the Cape Fear Crossing project (referring to it as the “Skyway”) providing a second connection from Brunswick County and the Wilmington area as positively relieving existing traffic congestion but also causing significant development pressure in the southern portion of Leland. Other transportation project priorities listed in the plan within the project study area include:

- Interchange at Old Fayetteville Road and US 74/76
- New roadway connection between NC 133 and US 17

- Mid-town bicycle trail to include a bicycle/pedestrian crossing of US 17 and an off-road connection to Brunswick Nature Park from US 17
- Increased public transit services throughout the Town of Leland

3.3 Physical Environment Characteristics

This section considers the impacts of the detailed study alternatives on a variety of other physical characteristics of the project area.

3.3.1 Noise

Ambient noise is that noise which is all around us caused by natural and manmade events. It includes the wind, rain, thunder, birds chirping, insects, household appliances, commercial operations, lawn mowers, airplanes, automobiles, etc. It is all noise that is present in a particular area.

Existing traffic noise exposure varies in the vicinity of the proposed Cape Fear Crossing project. Dominant roadway noise sources in the project area include US 17-74-76, US 421 (Carolina Beach Road), US 117 (Shipyard Boulevard) and Independence Boulevard. Various secondary roads and residential streets may be the dominant noise source for receptors in very rural areas of Brunswick County and in the City of Wilmington that are relatively distant from the major highways listed above.

Non-traffic noise sources in the project area include the CSX/US Government railway between the Town of Leland and Sunny Point Military Terminal through Brunswick County, the CSX/Port of Wilmington railway from Leland to the Port of Wilmington near the western terminus of Shipyard Boulevard and air traffic related to Wilmington International Airport north of downtown Wilmington. Each of these sources of non-traffic noise may cause receptors to experience significant, temporary spikes in noise levels.

Short-term noise monitoring was conducted to evaluate existing ambient noise conditions within the project study area. Data collected through noise monitoring in one-minute increments for 15 to 30 minutes is used to develop a comparison between the monitored results and the output obtained from the TNM® noise prediction model. This comparison is performed to validate the model to actual local conditions so that the model can be used with confidence to predict the existing and future worst-hour noise levels at desired locations throughout the project area.

Existing noise measurements were collected under meteorologically acceptable conditions when the pavement was dry and winds were calm or light. Additional data collected at each monitoring location included atmospheric conditions such as general wind speed, humidity, pressure, and ambient temperature.

Noise level data collection was performed on May 6 and August 17-18, 2015 and again on October 30-31, 2018. Short term noise monitoring data (15-20 minutes) was collected at 19 locations and long term noise monitoring data (24-hours) was collected at three locations in 2015. Short term noise monitoring data (15-30 minutes) was collected at 13 locations and long term noise monitoring data (6-24 hours) was collected at six locations in 2018. Five short-term locations where 2015 data was

collected were replaced with 2018 locations in the western portion of the project area to account for changes in traffic volumes in the vicinity of I-140, which fully opened in December 2017.

Short-term noise levels collected within the project area range from 39 to 71 dB(A) and long-term noise levels range from 50 to 59 dB(A). One long-term measurement of 77 dB(A) Leq was collected for 16 hours in the parking lot of the USS North Carolina Battleship Memorial. Intermittent construction and maintenance activities that were ongoing at the ship during the time fieldwork was performed are believed likely to have caused this aberrant noise level, which is considerably elevated above all other long-term measurements.

Twenty-minute traffic data (vehicle volume, type and speed) were recorded at all measurement locations on all roadways visible from the monitoring site that significantly contributed to the overall noise level. Traffic was grouped into one of five categories: automobiles, medium trucks, heavy trucks, buses, and motorcycles. The 20-minute traffic data was converted to one hour traffic for validation of the noise model. Traffic was highly variable among the monitoring locations.

The ambient noise monitoring locations are shown in Figure 3-7.

For the traffic noise analysis, loudest-hour existing noise levels were assessed as the TNM-predicted noise levels based on existing loudest-hour traffic estimates or the ambient noise levels obtained at representative locations in the field. Per 23 CFR 772.5, existing noise levels are defined as “the worst noise hour resulting from the combination of natural and mechanical sources and human activity usually present in a particular area.” If the TNM-predicted existing loudest-hour traffic noise levels are lower than the hourly-equivalent noise levels obtained in the field, then existing noise levels are assessed as the latter. To validate the accuracy of the model, FHWA TNM v2.5 was used to compare measured traffic noise levels to modeled noise levels at field measurement locations.

3.3.2 Air Quality

Air pollution originates from various sources. Emissions from industry and internal combustion engines are the most prevalent sources. The impact resulting from highway construction ranges from intensifying existing air pollution problems to improving the ambient air quality. Changing traffic patterns are a primary concern when determining the impact of a new highway facility or the improvement of an existing highway facility. Motor vehicles emit carbon monoxide (CO), nitrogen oxide (NO), hydrocarbons (HC), particulate matter, sulfur dioxide (SO₂), and lead (Pb) (listed in order of decreasing emission rate).

The Federal Clean Air Act of 1970 established the National Ambient Air Quality Standards (NAAQS). These were established in order to protect public health, safety, and welfare from known or anticipated effects of air pollutants. The NAAQS contain criteria for SO₂, particulate matter (PM₁₀, 10-micron and smaller, PM_{2.5}, 2.5-micron and smaller), CO, nitrogen dioxide (NO₂), ozone (O₃), and lead (Pb).

The primary pollutants from motor vehicles are unburned HC, NO_x, CO, and particulates. HC and NO_x can combine in a complex series of reactions catalyzed by sunlight to produce photochemical oxidants

such as O₃ and NO₂. Because these reactions take place over a period of several hours, maximum concentrations of photochemical oxidants are often found far downwind of the precursor sources. These pollutants are regional problems.

A project-level air quality analysis was prepared for this project. The full technical report is entitled *Air Quality Report, Cape Fear Crossing, Brunswick and New Hanover Counties* (NCDOT 2018e).

3.3.3 Farmlands

Criteria for identifying and considering the effects of federal programs on the conversion of farmland to nonagricultural uses are established in the Farmland Protection Policy Act of 1981 (FPPA) (7 CFR 658). North Carolina Executive Order Number 96, *Conservation of Prime Agricultural and Forest Lands*, requires all state agencies to consider the impact of land acquisition and construction projects on prime farmland soils, as defined by the Natural Resources Conservation Service (NRCS).

For the purposes of the FPPA, farmland is divided into three categories: prime, unique, or local or statewide importance (Public Law 97-98, Subtitle 1, Section 1540). The three categories are defined as follows:

- Prime farmland is land that has “the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soils erosion” (Public Law 97-978, Subtitle 1, Section 1540). Land already in or committed to urban development or water storage is not included.
- Unique farmland is land other than prime farmland used for production of specific high value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality or high yields of specific crops when treated and managed (Public Law 97-98, Subtitle 1, Section 1540).
- State and locally important farmland is land of statewide or local importance for the production of food, fiber, forage, or oilseed crops as determined by the appropriate state agency.

Table 3-7 and Figure 3-8 shows prime farmland soils in the project study area.

Table 3-7: Prime Farmland Soils in the Study Area

Soil Series	Mapping Unit	County	Farmland Class
Chowan silt loam	CH	Brunswick	Prime farmland if protected from flooding or not frequently flooded during the growing season
Craven fine sandy loam, 1 to 4 percent slopes	Cr	New Hanover	All areas are prime farmland
Goldsboro fine sandy loam, 0 to 2 percent slopes	GoA	Brunswick	All areas are prime farmland

Table 3-7: Prime Farmland Soils in the Study Area

Soil Series	Mapping Unit	County	Farmland Class
Lynchburg fine sandy loam	Ls	New Hanover	Prime farmland if drained
Lynn Haven fine sand	Ly	Brunswick	Prime farmland if drained
Norfolk fine sandy loam, 0 to 4 percent slopes	No	New Hanover	All areas are prime farmland
Norfolk loamy fine sand, 2 to 6 percent slopes	NoB	Brunswick	All areas are prime farmland
Onslow fine sandy loam	On	Brunswick and New Hanover	All areas are prime farmland
Pantego mucky loam	Pn	Brunswick and New Hanover	Prime farmland if drained
Rains fine sandy loam	Ra	Brunswick	Prime farmland if drained
Torhunta mucky fine sandy loam	To	Brunswick and New Hanover	Prime farmland if drained
Woodington fine sandy loam	Wo	Brunswick and New Hanover	Prime farmland if drained
Wrightsboro fine sandy loam, 0 to 2 percent slopes	Wr	New Hanover	All areas are prime farmland

Source: USDA (2017).

3.3.4 Utilities

3.3.4.1 Electric

Electric service to local residents and businesses is provided by Duke Energy Progress. Duke Energy Progress has high-voltage electric transmission lines within the project study area, including one that runs north to south in Brunswick County, bisecting the town of Leland. Another line runs approximately west to east in the southeastern portion of the project study area and crosses the Cape Fear River. This transmission line creates a vertical constraint to shipping traffic of 165 feet from MHW. Duke Progress Energy is currently preparing a feasibility study to raise the height of the existing power lines across the Cape Fear River to 235 feet.

3.3.4.2 Water

The Cape Fear Public Utility Authority (CFPUA) provides water and sewer services to the residents of the City of Wilmington and New Hanover County. Three public utility providers provide service to the project study area in Brunswick County: Brunswick County Public Utilities, Leland Public Utilities, and H2GO.

3.3.4.3 Wastewater

Water and wastewater services in Wilmington and New Hanover County are provided by the CFPWA. The Town of Leland provides sewer service through the Northeast Brunswick Regional Wastewater Treatment Plant located in the Town of Navassa, which is owned and operated by Brunswick County. The Town of Belville provides wastewater service through H2GO and the Belville Wastewater Treatment Plant. Unincorporated areas of Brunswick County rely on septic tanks for wastewater treatment. It is anticipated that as land outside local jurisdictions develops sewer service will be made available to serve the properties (J. Strickland, personal communication, Town of Leland, April 3, 2015).

3.3.4.4 Natural Gas

Natural gas is distributed and serviced throughout the project study area by Piedmont Natural Gas.

3.3.4.5 Telephone

Telephone service is provided throughout the project study area by AT&T.

3.3.5 Hazardous Materials

Hazardous material sites are regulated by the Resource Conservation Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Hazardous materials are generally defined as material or a combination of materials that present a potential hazard to human health or the environment.

The NCDOT GeoEnvironmental Section of the Geotechnical Engineering Unit investigated the project study area using GIS and field reconnaissance along the detailed study alternative corridors and prepared a *Hazardous Materials Report* (NCDOT 2015b). A search of the appropriate environmental agencies' databases was performed to assist in evaluating identified sites. Field reconnaissance was conducted on January 14, 2015. Forty potential hazardous sites were identified within the project study area. Thirty-nine of the sites are located in New Hanover County, with the majority located along US 421 between Burnett Boulevard and Shipyard Boulevard. One site is located in Brunswick County at the intersection of Hazels Branch Road and Sloan Road. The report identifies sites that may contain petroleum underground storage tanks (USTs) (31 sites), petroleum storage facilities (3 sites), automotive repair facilities (3 sites), dry cleaning facilities (2 sites), and hazardous waste sites (1 site). No landfills were identified within the detailed study alternative corridors.

3.3.6 Mineral Resources

Wilmington Mines, deposit ID 10297786, is the only mine located within the project study area; it is located north of US 17 Business along the Cape Fear River. It is a past producing sand and granite mine and no longer in operation.

3.3.7 Floodplains/Floodways

Both Brunswick and New Hanover counties participate in the National Flood Insurance Program, and portions of the project study area are within the 100-year floodplain. Figure 3-9 shows floodplains in the project study area.

3.3.8 Protected Lands

3.3.8.1 Wild and Scenic Rivers

No rivers or sections of river within or near the project study area are designated as Wild, Scenic, or Recreational under the National Wild and Scenic Rivers Act of 1968.

3.3.8.2 State/National Forests

No state or national forests are located in the project study area.

3.3.8.3 Gamelands and Preservation Areas

No gamelands are located in the project study area. Thirteen Natural Heritage Program Natural Areas (NHPNA) or managed preservation areas are located within the project study area (NCDOT 2015e). The 13 NHPNA sites are listed below and shown on Figure 3-10.

- Barnards Creek Natural Area
- Battle Royal Bay
- Brunswick River/Cape Fear River Marshes
- Clarendon Plantation Limesinks
- Greenfield Lake
- Little Green Swamp
- Lower Cape Fear River Aquatic Habitat
- Mott Creek Natural Area
- Pleasant Oaks/Goose Landing Plantations
- South Wilmington Sandhills
- Sturgeon Creek Tidal Wetlands
- Town Creek Aquatic Habitat
- Town Creek Marshes and Swamp

In addition, most of Eagles Island is managed as a dedicated nature preserve. NCDOT manages three separate mitigation sites within the project study area. The mitigation sites are plots of land that are owned or maintained by NCDOT for stream, wetland, or threatened and endangered species mitigation credits. One mitigation site is located on Eagle Island, northeast of the US 17/US 74 interchange. Another mitigation site is located in the southwest portion of the project study area near the junction of US 17 and Maco Road Northeast. The third mitigation site is located in the northwestern portion of the project study area on the western side of I-140.

3.4 Cultural Resources

The proposed project is subject to compliance with Sections 106 and 110 of the National Historic Preservation Act (NHPA) of 1966, as amended (36 CFR 800), which requires federal agencies to take into account the effects of their undertaking on properties listed on or eligible for listing on the NRHP (including archaeological sites) and afford the Advisory Council on Historic Preservation an opportunity to comment on the effects of the undertaking.

Section 110(f) of the NHPA requires that federal agencies considering undertakings that may directly and adversely affect National Historic Landmarks (NHLs), “to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to such landmark, and shall afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking” [Section 110(a)(2)(B) and Section 110(f)].

The methods used to identify historic architectural and archaeological resources in the project study area and the results of those investigations are described in this section.

3.4.1 Historic Architectural Resources

The information in this section is from the *Historic Architecture Eligibility Evaluation Report* prepared for this project (NCDOT 2016c), with historical context drawn from the *Terrestrial Cultural Resources Background Report* (NCDOT 2009). An architectural resources survey was conducted in early 2011. Eight of the resources identified by the survey were listed in the NRHP (NRHP-listed) or determined eligible for listing (NRHP-eligible). A letter from the State Historic Preservation Office (HPO) dated June 13, 2016, concurring with the status of the historic resources listed in Table 3-9 is provided in Appendix A. An additional study for STIP Project U-5729 identified two historic resources determined eligible for NRHP listing (see HPO concurrence form dated February 12, 2019, in Appendix A). These historic resources are summarized in Table 3-8 and shown on Figure 3-11. Detailed descriptions and photographs of the resources are provided in the *Historic Architecture Eligibility Evaluation Report* (NCDOT 2016c) and the *Historic Structures Survey Report* for STIP U-5729 (NCDOT 2018c).

Table 3-8: Historic Architectural Resources in the Project Study Area

Name	Type
Devereux H. Lippitt House or Clarendon House	NRHP-eligible
Goodman House and Doctor’s Office	NRHP-eligible
Hanover Heights Historic District	NRHP-eligible
Lake Forest Defense Housing Historic District	NRHP-eligible
Sunset Park Historic District	NRHP-listed
USS North Carolina	NRHP-listed and NHL
Wilmington Historic District	NRHP-listed
Wilmington National Guard Armory	NRHP-eligible

Table 3-8: Historic Architectural Resources in the Project Study Area

Name	Type
Jacob and Sarah Horowitz House	NRHP-eligible
Sunset Park School	NRHP-eligible

The Wilmington Historic District comprises much of downtown Wilmington. This district was listed on the NRHP in 1974 and had its boundaries expanded in 2003. The USS North Carolina, a World War II era battleship listed on the NRHP and designated as an NHL, is located along the western bank of the Cape Fear River. The Sunset Park Historic District is listed on the NRHP and is located along US 421. The district is bounded by Sunset Avenue to the north and Southern Boulevard to the south. Across the road from the Sunset Park Historic District is the Wilmington National Guard Armory, which has been determined to be NRHP eligible. The Hanover Heights Historic District is also NRHP-eligible, comprising approximately 100 residential acres in Wilmington, just southeast of the intersection of Carolina Beach Road and Shipyard Boulevard. The Lake Forest Defense Housing, a neighborhood of World War II era housing, has been determined to be NRHP-eligible. The Jacob and Sarah Horowitz House is located on Carolina Beach Road, just north of the Sunset Park Historic District. The former Sunset Park School is located along Carolina Beach Road, across from the Sunset Park Historic District.

Two historic resources within Brunswick County have been determined to be NHRP-eligible. The Goodman House and Doctor's Office is located at the western end of the project study area, near the interchange of I-140 and US 17. The Devereux H. Lippitt House, alternatively referred to as the Clarendon House, was constructed in 1923 and is located between NC 133 and the Cape Fear River.

3.4.2 Archaeological Resources

A GIS model was developed in 2011 to analyze the potential presence of archaeological resources within the project study area. The methods and findings of this predictive model are reported in detail in the *Terrestrial Archaeological Resources Predictive Model* report (NCDOT 2011) and in the 2017 updated report, which revises the 2011 predictive model corridors using the 12 alternatives chosen for detailed study in 2014 (NCDOT 2017f).

The predictive model uses several factors to classify the project study area into areas of high likelihood or low likelihood for the presence of prehistoric or historic archaeological resources. Factors that were used to predict the likelihood of prehistoric resource presence include topographic setting, proximity to water, soil drainage, and land disturbance. The same factors were used to predict the likelihood of the presence of historic resources, with the addition of proximity to historic roads. Mathematical formulas were created to predict presence likelihoods of both prehistoric and historic resources. These formulas weighted the factors according to their supposed level of influence on the likelihood of archaeological resource presence.

The results of the model show that, excluding areas of water, 38.6 percent of the analysis area was assigned a high likelihood for the presence of either prehistoric or historic resources, and 61.4 percent

was assigned a low likelihood for the presence of any archaeological resources. The 2017 updated report also compared the presence of known archaeological sites to the results of the model (NCDOT 2017f). Known site data were obtained in October 2016 from the North Carolina Office of State Archaeology, and data show that 136 previously recorded archaeological sites are located within the project study area. Of these sites, 114 (83.8 percent) are located completely or partially within areas that were classified by the GIS model as high probability.

3.5 Natural Environment Characteristics

Aspects of the existing natural environment in the project study area presented in this section include soils and geology, biotic communities and wildlife, water resources, and jurisdictional issues such as wetlands and protected species. Unless otherwise cited, information in this section was obtained from the *Natural Resources Technical Report* (NRTR) prepared for this project (NCDOT 2017c).

The project study area is located in the coastal plain physiographic province of North Carolina. Topography in the project vicinity is characterized as nearly level, with wide upland surfaces. Elevations in the project study area range from sea level to 75 feet above mean sea level. Land use within the project vicinity includes a mixture of residential, commercial, industrial, agricultural, and forested woodland areas.

3.5.1 Soils/Geology

The Brunswick County Soil Survey identifies 24 soil unit types within the Brunswick County portion of the project study area (US Department of Agriculture [USDA] 1986). Additionally, the New Hanover County Soil Survey identifies 21 soil unit types within the New Hanover County portion of the project study area (USDA 1977). The soil series prevalent in the project study area include the Baymeade, Torhunta, Dorovan, and Leon series. Table 3-9 lists the soil series, drainage class, and hydric status.

Table 3-9: Soils in the Project Study Area

Soil Series	Mapping Unit	Drainage Class	Hydric Status
Brunswick County			
Baymeade fine sand, 1 to 6 percent slopes	BaB	Well drained	Hydric ^a
Baymeade and Marvyn soils, 6 to 12 percent slopes	BDC	Well drained	Hydric ^a
Blanton fine sand, 0 to 5 percent slopes	BnB	Moderately well drained	Hydric ^a
Bragg fine sandy loam, 2 to 6 percent slopes	BrB	Well drained	Nonhydric
Chowan silt loam	CH	Poorly drained	Hydric
Dorovan muck	DO	Very poorly drained	Hydric
Foreston loamy fine sand	Fo	Moderately well drained	Hydric ^a
Goldsboro fine sandy loam, 0 to 2 percent slopes	GoA	Moderately well drained	Nonhydric

Table 3-9: Soils in the Project Study Area

Soil Series	Mapping Unit	Drainage Class	Hydric Status
Lafitte muck	LA	Very poorly drained	Hydric
Leon fine sand	Lo	Poorly drained	Hydric
Lynchburg fine sandy loam	Ly	Somewhat poorly drained	Hydric ^a
Mandarin fine sand	Ma	Somewhat poorly drained	Hydric ^a
Muckalee loam	Mk	Poorly drained	Hydric
Murville mucky fine sand	Mu	Very poorly drained	Hydric
Newhan fine sand, dredged, 2 to 3 percent slopes	NhE	Excessively drained	Nonhydric
Norfolk loamy fine sand, 2 to 6 percent slopes	NoB	Well drained	Hydric ^a
Onslow fine sandy loam	On	Moderately well drained	Hydric ^a
Pactolus fine sand, 0 to 2 percent slopes	PaA	Moderately well drained	Hydric ^a
Pantego mucky loam	Pn	Very poorly drained	Hydric
Rains fine sandy loam	Ra	Poorly drained	Hydric
Tomahawk loamy fine sand	Tm	Moderately well drained	Hydric ^a
Torhunta mucky fine sandy loam	To	Very poorly drained	Hydric
Woodington fine sandy loam	Wo	Poorly drained	Hydric
Yaupon silty clay loam, 0 to 3 percent slopes	YaB	Somewhat poorly drained	Hydric ^a
New Hanover County			
Baymeade fine sand, 1 to 6 percent slopes	Be	Well drained	Nonhydric
Baymeade-Urban land complex, 1 to 6 percent slopes ^b	Bh	—	Hydric ^a
Borrow pits ^b	Bp	—	Nonhydric
Craven fine sandy loam, 1 to 4 percent slopes	Cr	Moderately well drained	Nonhydric
Dorovan soils	DO	Very poorly drained	Hydric
Johnston soils	JO	Very poorly drained	Hydric
Kenansville fine sand, 0 to 3 percent slopes	Ke	Well drained	Nonhydric
Kureb sand, 1 to 8 percent slopes	Kr	Excessively drained	Hydric ^a
Kureb-Urban land complex, 1 to 8 percent slopes ^b	Ku	—	Hydric ^a
Lakeland sand, 1 to 8 percent slopes	La	Excessively drained	Nonhydric
Leon sand	Le	Poorly drained	Hydric
Leon-Urban land complex ^b	Lo	—	Hydric
Lynchburg fine sandy loam	Ls	Somewhat poorly drained	Hydric ^a

Table 3-9: Soils in the Project Study Area

Soil Series	Mapping Unit	Drainage Class	Hydric Status
Lynn Haven fine sand	Ly	Poorly drained	Hydric
Murville fine sand	Mu	Very poorly drained	Hydric
Norfolk fine sandy loam, 0 to 4 percent slopes	No	Well drained	Nonhydric
Rimini sand, 1 to 6 percent slopes	Rm	Excessively drained	Hydric ^a
Seagate fine sand	Se	Somewhat poorly drained	Hydric ^a
Tidal marsh ^b	TM	—	Hydric
Urban land ^b	Ur	—	Nonhydric
Wakula sand, 1 to 8 percent slopes	Wa	Somewhat excessively drained	Nonhydric
Wrightsboro fine sandy loam, 0 to 2 percent slopes	Wr	Moderately well drained	Nonhydric

Source: NCDOT (2017c).

^a Soils that are primarily nonhydric, but may contain hydric inclusions.

^b Drainage class not provided in the New Hanover County soil survey for the indicated soil series.

3.5.2 Biotic Communities and Wildlife

Biotic resources in the project study area include both terrestrial and aquatic communities. The composition of these communities is reflective of the topography, soils, hydrologic influences, and past and present land uses. The following sections describe the existing vegetation and associated wildlife that have been identified within the project study area.

3.5.2.1 Terrestrial Communities and Wildlife

Terrestrial Communities

Fifteen terrestrial communities were identified in the detailed study alternative corridors. Table 3-10 summarizes the terrestrial community coverage within the project study area. A brief description of each community type follows.

Table 3-10: Coverage of Terrestrial Communities in the Detailed Study Alternative Corridors

Community	Coverage (acres)
Maintained/Disturbed	2,455
Mesic Pine Flatwoods	1,084
Salt/Brackish Marsh	735
Pine Plantation	668
Wet Pine Flatwoods	329
Pocosin	197

Table 3-10: Coverage of Terrestrial Communities in the Detailed Study Alternative Corridors

Community	Coverage (acres)
Cypress/Gum Swamp – Blackwater Subtype	172
Nonriverine Wet Hardwood Forest	154
Coastal Plain Small Stream Swamp – Blackwater Subtype	111
Estuarine Woody Wetland	76
Cutover	73
Xeric Sandhill Scrub	34
Coastal Plain Bottomland Hardwood – Blackwater Subtype	24
Nonriverine Swamp Forest	8
Small Depression Pocosin	5
TOTAL^a	6,125

Source: NCDOT (2017c).

^a Open water accounts for 256.9 acres of the project study area.

Maintained/Disturbed

This community consists of areas that are periodically maintained by human influences, such as roadside and power line rights-of-way, regularly mowed lawns, commercial and industrial properties, and open areas. All of these land uses tend to have similar vegetation, with few large trees and abundant herbaceous cover. The tree species observed in the project study area include loblolly pine, red maple, sweet-gum, live oak, black cherry, white oak, and longleaf pine; however, residential properties tend to have a variety of large tree species. Two common shrubs observed occurring both naturally and as escaped plants are wild and cultivated roses and wax myrtle. Common fescue is the dominant groundcover species throughout most of the area. Other groundcover and herbaceous species include goldenrod, broomsedge, dog-fennel, Bermuda grass, and Japanese honeysuckle.

Mesic Pine Flatwoods

This community was found on mesic (non-wetland) flats in the detailed study alternative corridors, which commonly occur on the breaks of interstream divides. This community contains a closed to open canopy of longleaf or loblolly pine, occasionally mixed with hardwood species like sweet-gum or red maple. The understory ranges from sparse to dense and contains species such as southern red oak, post oak, blackjack oak, mockernut hickory, and sweet-gum. A low shrub layer of varying density is generally present. Common species include inkberry, large gallberry, fetterbush, sweet bay, red bay, giant cane, and creeping blueberry. The herb layer is dominated by wiregrass and bracken fern, but also contains lesser quantities of broomstraw and panic grass.

Salt/Brackish Marsh

This community is the dominant community along the Cape Fear River, Brunswick River, Alligator Creek, and portions of Mallory Creek and Little Mallory Creek. These areas are subject to regular or occasional

flooding by tides, including wind tides. This community contains scattered specimens of bald and pond cypress, but it is dominated mainly by herbaceous vegetation. Dominant species include common reed, narrow-leaf cattail, black needlerush, smooth cordgrass, and arrow arum.

Pine Plantation

This community is scattered throughout the project study area, primarily in Brunswick County, on large tracts of land being managed for timber production. The dominant canopy species is loblolly pine. The understory is usually sparse and contains species such as sweet-gum and red maple. Shrub species include wax myrtle and fetterbush. The herb layer is also sparse but includes creeping blueberry and bracken fern. Woody vines such as Japanese honeysuckle and common greenbrier are also present.

Wet Pine Flatwoods

This community occurs on seasonally wet to frequently wet locations that were most commonly observed in broad areas of interstream divides within the project study area. The community often serves as headwaters to the small stream swamp community. While seasonally saturated, this community may become quite dry for part of the year. This community has a canopy of longleaf, loblolly, or pond pine, or any combination of the three species. The understory is sometimes absent but usually contains volunteer hardwoods. The shrub layer varies in density and contains species similar to those in the Mesic Pine Flatwoods community. The herb layer generally includes cinnamon fern, bushy bluestem, and various sedges.

Pocosin

This community occurs on poorly drained interstream flats, primarily in the northwest portion of the project study area. A dense shrub layer approximately 4 to 8 feet tall is common, with little evidence of fire. Pocosins are dominated by fetterbush, titi, and inkberry, with abundant laurel greenbrier. Scattered pond pine, swamp bay, loblolly bay, and sweet bay were also commonly observed. Herbs are usually absent beneath the dense shrub layer.

Cypress/Gum Swamp – Blackwater Subtype

This community most commonly occurs as backswamp areas to larger perennial streams and open bodies of water. In the project study area, this community is prevalent along Mallory Creek and Morgan Branch, as well as some large tributaries to these creeks. The canopy is dominated by swamp black gum, bald cypress, or pond cypress. The understory and shrub layer is usually poorly developed or absent. Swamp black gum and red maple are the most typical species, with swamp bay, sweet bay, and buttonbush occurring in places. Observed shrub species included titi and fetterbush. The herb layer ranges from nearly absent to moderately-covered. Species include lizard's tail, sedge, and netted chain-fern.

Nonriverine Wet Hardwood Forest

This community occurs on poorly drained interstream flats in the project study area, and often serves as headwaters to the small stream swamp community. This community is dominated by various hardwood

trees typical of bottomlands. Common species include swamp chestnut oak, laurel oak, yellow poplar, sweet-gum, red maple, and swamp black gum. The understory includes species such as musclemwood, red maple, and American holly. The shrub layer is generally sparse to moderately dense. Species include spicebush, sweet pepperbush, highbush blueberry, wax myrtle, giant cane, and red chokeberry. Vines such as poison ivy, trumpet creeper, and grape are common. The herb layer includes Christmas fern and netted chain-fern.

Coastal Plain Small Stream Swamp – Blackwater Subtype

This community is found on floodplains of small blackwater streams throughout the project study area. The canopy is dominated by various combinations of bald cypress, swamp black gum, and other blackwater river floodplain species including sweet-gum, yellow poplar, red maple, laurel oak, swamp chestnut oak, river birch, loblolly pine, and pond pine. The understory also contains a wide range of species including musclemwood, red maple, American holly, sweet bay, swamp bay, and titi. The shrub layer ranges from sparse to moderately dense. Dominant species include coastal doghobble, fetterbush, giant cane, wax myrtle, and swamp palmetto. Poison ivy vines are particularly common in this community along with common greenbrier and laurel greenbrier. Herbs include sedges, lizard's tail, and false nettle.

Estuarine Woody Wetland

This community occurs on the fringe of the salt/brackish marsh community and serves as a transition to nearby uplands. Canopy vegetation includes loblolly pine, willow oak, red maple, and an occasional bald cypress. Shrub species include eastern red cedar, silverling, and wax myrtle. Herbaceous vegetation include sedges, narrow-leaf cattail, soft rush, and cinnamon fern.

Cutover

This community consists of early forest successional areas that have been logged within five years. Small loblolly and pond pines are common growing beneath larger shrub and herbaceous species that are the first to establish in these areas. Aside from the pines, the dominant species include sweet-gum, red maple, inkberry, wax myrtle, red chokeberry, fetterbush, common greenbrier, blackberry, Japanese honeysuckle, broomsedge, and goldenrods.

Xeric Sandhill Scrub

This community consists of coarse, deep sand ridges; Carolina bay rims; and sandy uplands. These areas are the driest in the project study area and usually have an open canopy of longleaf pine, with an understory of turkey oak. Sassafras, poison oak, and persimmon were occasionally observed. A sparse to moderately dense herb layer consists of species such as wiregrass and spikemoss.

Coastal Plain Bottomland Hardwood– Blackwater Subtype

This community is seasonally to intermittently flooded, and was observed on the floodplains of some larger streams in the project study area. The canopy is dominated by various combinations of bottomland hardwoods and conifers. Species observed included laurel oak, water oak, red maple,

loblolly pine, and sweet-gum. The understory includes red maple, swamp bay, American holly, and sweet bay. The shrub layer often includes titi and giant cane. Vines are sometimes dense with common greenbrier, poison ivy, and muscadine comprising this layer. The herb layer is poorly developed but includes occurrences of cinnamon fern, Christmas fern, Virginia chain-fern, netted chain-fern, and royal fern.

Nonriverine Swamp Forest

This community consists of very poorly drained upland flats that are saturated or seasonally inundated by the high water table. In the project study area, this community almost always drains to a nearby small stream. The canopy contains varying mixtures of pond cypress, bald cypress, swamp black gum, loblolly pine, pond pine, yellow poplar, and red maple. Understory species that were observed included sweet bay, swamp bay, titi, fetterbush, sweet pepperbush, highbush blueberry, and laurel greenbrier. Typical herbs include Virginia chain-fern, netted chain-fern, sedges, and sphagnum moss.

Small Depression Pocosin

This community occurs in the form of small depressions surrounded by sandy uplands. These areas are seasonally flooded or intermittently exposed and may receive drainage from surrounding sandy areas. In the project study area, this community is commonly surrounded by the mesic pine flatwoods community. A dense to fairly dense shrub layer was observed, with species including fetterbush, titi, inkberry, sweet pepperbush, blue huckleberry, highbush blueberry, and lamb-kill. The canopy is usually dominated by pond pine, red maple, or swamp bay, with other common species such as sweet bay, swamp black gum, pond cypress, loblolly pine, and loblolly bay. Laurel greenbrier was the most common vine found in this community. Herbs are generally sparse, but cinnamon fern, Virginia chain-fern, netted chain-fern, and sedges were the most commonly observed.

Invasive Species

Fifteen species listed in NCDOT *Invasive Exotic Plants of North Carolina* were found to occur in the project study area (NCDOT 2008). The species identified were tree-of-heaven (Threat level 1), Chinese Privet (Threat level 1), multiflora rose (Threat level 1), Japanese grass (Threat level 1), kudzu (Threat level 1), hydrilla (Threat level 1), mimosa (Threat level 2), autumn olive (Threat level 2), shrub lespedeza (Threat level 2), bamboo (Threat level 2), Johnson grass (Threat level 2), English ivy (Threat level 2), Japanese honeysuckle (Threat level 2), Chinese wisteria (Threat level 2), and Bradford pear (Threat level 3).

Terrestrial Wildlife

Terrestrial communities in the project study area are comprised of both natural and disturbed habitats that may support a diversity of wildlife species. Species observed during field investigations are discussed below. Species for which there was evidence in the form of scat or tracks are also included in the discussion.

Mammal species that were observed utilizing forested habitats and stream corridors within the project study area include beaver, black bear, coyote, eastern cottontail, gray squirrel, cotton mouse, raccoon, gray fox, Virginia opossum, white-tailed deer, and woodchuck. Birds that were observed using forest and forest edge habitats include American crow, American woodcock, Carolina chickadee, bobwhite quail, cardinal, Carolina wren, common flicker, pileated woodpecker, red-bellied woodpecker, eastern bluebird, mockingbird, mourning dove, myrtle warbler, pine warbler, tufted titmouse, prothonotary warbler, wild turkey, wood thrush, and yellow-rumped warbler. Birds observed using the open habitat or water bodies within the project study area include belted kingfisher, Canada goose, Cooper's hawk, field sparrow, gray catbird, great blue heron, great egret, green heron, laughing gull, ring-billed seagull, mallard, osprey, red-tailed hawk, turkey vulture, and red-winged blackbird. Reptile and amphibian species observed using terrestrial communities in the project study area include black racer, eastern box turtle, eastern fence lizard, eastern king snake, five-lined skink, eastern garter snake, green anole, rat snake, six-lined racerunner, rough green snake, copperhead, spring peeper, and southern toad.

3.5.2.2 Aquatic Communities and Wildlife

Aquatic communities in the project study area consist of perennial and intermittent coastal plain streams, swamps, small depression ponds, and community lakes. These communities can support various fish, reptile, and amphibian species, as well as mollusks and crustaceans. Species observed in or along perennial streams in the project study area include brown water snake, snapping turtle, bluegill, eastern crayfish, green treefrog, barking treefrog, and water moccasin. Intermittent streams in the project study area are relatively small in size but support crayfish, yellowbelly slider, bullfrogs, and various benthic macroinvertebrates. Pond, lake, and swamp habitats support bluegill, largemouth bass, snapping turtle, crayfish, bullfrogs, American alligator, spotted turtle, green treefrog, brown water snake, and water moccasin.

3.5.3 Water Resources

Water resources in the project study area are part of the Cape Fear River basin (US Geological Survey [USGS] Hydrologic Unit 03030005).

3.5.3.1 Streams

A total of 65 jurisdictional streams were identified in the detailed study alternative corridors. The physical and jurisdictional characteristics of these streams are provided in Table 3-11, and the location of these streams is reflected on Figure 3-12 through Figure 3-29. No High Quality Waters (HQW), Outstanding Resource Waters (ORW), or water supply watersheds (WS-I or WS-II) are within 1 mile downstream of the project study area.

Table 3-11: Physical and Jurisdictional Characteristics of Streams in the Study Area

Map ID	Stream Name	DWQ Index Number	Best Usage Classification	Bank Height (feet)	Bankful Width (feet)	Water Depth (inches)	Channel Substrate	Velocity	Clarity	Length in Study Area (feet)	Jurisdictional Classification	Compensatory Mitigation Required
1SB	UT to Jackeys Creek	18-77-3	C;Sw	0.5–1	0.5	2–6	Sand	Slow	Slightly Turbid	1,218	Perennial	Yes
1SC	UT to Jackeys Creek	18-77-3	C;Sw	0.5–1	2–4	2–4	Sand	Slow	Slightly Turbid	1,268	Intermittent	Yes
										242	Perennial	
2SC	UT to Piney Branch	18-77-3-1	C;Sw	4–8	3–4	4–6	Silt/Sand	Moderate	Slightly Turbid	1,226	Intermittent	Yes
										464	Perennial	
Piney Branch	Piney Branch	18-77-3-1	C;Sw	3–5	3–7	6–12	Sand	Moderate	Clear	1,345	Perennial	Yes
3SA	UT to Mallory Creek	18-78	C;Sw	2–3	2–3	6–12	Silt/Sand	Moderate	Clear	574	Intermittent	Yes
3SB	UT to Mallory Creek	18-78	C;Sw	3–4	2–3	6–12	Silt/Sand	Moderate	Clear	1,121	Intermittent	Yes
3SC ^a	UT to Mallory Creek	18-78	C;Sw	—	—	—	—	—	—	3,239	Perennial	Yes
5SA	UT to Barnards Creek	18-80	C;Sw	0.5	2–4	2–6	Silt/Sand	Slow	Clear	717	Intermittent	Yes
5SB	UT to Barnards Creek	18-80	C;Sw	4–6	2–4	2–6	Silt/Sand	Slow	Slightly Turbid	730	Intermittent	Yes
5SD	UT to Barnards Creek	18-80	C;Sw	4–6	2–4	2–6	Silt/Sand	Slow	Slightly Turbid	153	Intermittent	Yes
5SF	UT to Barnards Creek	18-80	C;Sw	0.5–2	2–3	2–8	Sand	Moderate	Slightly Turbid	938	Intermittent	Yes
5SG	UT to Barnards Creek	18-80	C;Sw	0.5	3–4	24–36	Sand	Moderate	Slightly Turbid	2,923	Perennial	Yes
5SH	UT to Barnards Creek	18-80	C;Sw	0.5	2–4	6–12	Sand	Moderate	Clear	483	Perennial	Yes
5SI	UT to Barnards Creek	18-80	C;Sw	0.5	2–4	6–12	Sand	Moderate	Slightly Turbid	499	Perennial	Yes
5SJ	UT to Barnards Creek	18-80	C;Sw	0.5	3–4	24–36	Sand	Moderate	Slightly Turbid	413	Perennial	Yes
5SK	UT to Barnards Creek	18-80	C;Sw	0.5–2	2–5	2–18	Si/Sa/G	Moderate	Slightly Turbid	388	Intermittent	Yes
										631	Perennial	
5SX	UT to Barnards Creek	18-80	C;Sw	0.5–1	2–4	12–24	Silt/Sand	Slow	Clear	1,252	Perennial	Yes

Table 3-11: Physical and Jurisdictional Characteristics of Streams in the Study Area

Map ID	Stream Name	DWQ Index Number	Best Usage Classification	Bank Height (feet)	Bankful Width (feet)	Water Depth (inches)	Channel Substrate	Velocity	Clarity	Length in Study Area (feet)	Jurisdictional Classification	Compensatory Mitigation Required
5SZ	UT to Barnards Creek	18-80	C;Sw	0.5–2	3–5	2–8	Sand	Moderate	Slightly Turbid	423	Intermittent	Yes
										824	Perennial	
Marina	Cape Fear River - Marina	18-(71)	SC	4–10	400	>120	Silt/Sand	Slow	Turbid	1,443	Perennial	Yes
Morgan Branch	Morgan Branch	18-81-7	C;Sw	2–7	4–40	12–>120	Silt/Sand	Moderate	Slightly Turbid	2,517	Perennial	Yes
6SC	UT to Jackeys Creek	18-77-3	C;Sw	2–3	3–5	6	Sand	Slow	Slightly Turbid	1,082	Intermittent	Yes
Jackeys Creek	Jackeys Creek	18-77-3	C;Sw	1–2	6–10	10–24	Sand	Slow	Turbid	601	Perennial	Yes
7SB	UT to Jackeys Creek	18-77-3	C;Sw	1–2	1–2	4–6	Sand	Slow	Slightly Turbid	237	Perennial	Yes
8SA	UT to Brunswick River	18-77	SC	0.5–1	4–5	6–18	Silt/Sand	Slow	Slightly Turbid	708	Perennial	Yes
8SB	UT to Brunswick River	18-77	SC	2–4	3–4	2–6	Sand	Slow	Slightly Turbid	135	Perennial	Yes
8SC	UT to Brunswick River	18-77	SC	4–5	3–4	1–5	Sand	Slow	Slightly Turbid	305	Intermittent	Yes
Alligator Creek	Alligator Creek	18-75	SC;Sw	4–10	100	>120	Silt/Sand	Moderate	Turbid	1,138	Perennial	Yes
Brunswick River	Brunswick River	18-77	SC	4–10	300	>120	Silt/Sand	Moderate	Turbid	1,079	Perennial	Yes
9SA	UT to Cape Fear River	18-(71)	SC	4–10	40	>120	Silt/Sand	Moderate	Turbid	708	Perennial	Yes
Cape Fear River	Cape Fear River	18-(71)	SC	4–10	3,000	>120	Silt/Sand	Moderate	Turbid	5,176	Perennial	Yes
Bishop Branch	Bishop Branch	18-81-7-1	C;Sw	1–2	5–10	10–24	Silt/Sand	Moderate	Turbid	5,865	Perennial	Yes
10SA	UT to Morgan Branch	18-81-7	C;Sw	1–2	2–4	6–10	Sand	Slow	Slightly Turbid	473	Perennial	Yes
10SB	UT to Bishop Branch	18-81-7-1	C;Sw	0.5–1.5	2–4	6–12	Silt	Slow	Turbid	2,685	Intermittent	Yes

Table 3-11: Physical and Jurisdictional Characteristics of Streams in the Study Area

Map ID	Stream Name	DWQ Index Number	Best Usage Classification	Bank Height (feet)	Bankful Width (feet)	Water Depth (inches)	Channel Substrate	Velocity	Clarity	Length in Study Area (feet)	Jurisdictional Classification	Compensatory Mitigation Required
10SD	UT to Bishop Branch	18-81-7-1	C;Sw	1–2	2–3	4–8	Silt/Sand	Slow	Slightly Turbid	23	Intermittent	Yes
10SE	UT to Bishop Branch	18-81-7-1	C;Sw	0.5–1	5–6	6–12	Sand	Slow	Turbid	1,453	Perennial	Yes
										222	Intermittent	
10SF ^b	UT to Bishop Branch	18-81-7-1	C;Sw	—	—	—	—	—	—	1,387	Perennial	Yes
10SG	UT to Morgan Branch	18-81-7	C;Sw	0.5	2–4	1–5	Sand	Moderate	Slightly Turbid	1,387	Perennial	Yes
10SH	UT to Morgan Branch	18-81-7	C;Sw	0.5	2–4	1–5	Sand	Slow	Slightly Turbid	877	Perennial	Yes
10SI	UT to Morgan Branch	18-81-7	C;Sw	0.5	3–5	12	Sand	Slow	Slightly Turbid	3,239	Perennial	Yes
10SJ	UT to Morgan Branch	18-81-7	C;Sw	0.5	1–2	1–3	Sand	Slow	Slightly Turbid	93	Intermittent	Yes
10SK	UT to Morgan Branch	18-81-7	C;Sw	0.5–1	5–15	12–36	Sand	Slow	Slightly Turbid	114	Perennial	Yes
10SL	UT to Morgan Branch	18-81-7	C;Sw	0.5–1	5–12	12–36	Sand	Slow	Slightly Turbid	889	Perennial	Yes
10SN ^b	UT to Morgan Branch	18-81-7	C;Sw	—	—	—	—	—	—	113	Intermittent	Yes
10SO ^b	UT to Morgan Branch	18-81-7	C;Sw	—	—	—	—	—	—	281	Intermittent	Yes
13SA	UT to Greenfield Lake	18-76-1	C;Sw	0.5–1	1–2	4	Sand	Slow	Clear	451	Perennial	Yes
Mallory Creek ^c	Mallory Creek	18-78	C;Sw	2–10	8–25	12–96	Silt/Sand	Moderate	Slightly Turbid	7,857	Perennial	Yes
Little Mallory Creek	Little Mallory Creek	18-78-1	C;Sw	2–10	2–30	4–96	Silt/Sand	Moderate	Slightly Turbid	2,527	Perennial	Yes
Goodland Branch	Goodland Branch	18-81-8	C;Sw	—	—	—	—	—	—	1,358	Perennial	Yes
20SA	UT to Town Creek	18-81	C;Sw	1–2	2–4	2–6	Silt/Sand	Slow	Clear	692	Intermittent	Yes
20SC	UT to Goodland Branch	18-81-8	C;Sw	0.5–1	2–3	0–6	Silt/Sand	Slow	Clear	1,175	Intermittent	Yes

Table 3-11: Physical and Jurisdictional Characteristics of Streams in the Study Area

Map ID	Stream Name	DWQ Index Number	Best Usage Classification	Bank Height (feet)	Bankful Width (feet)	Water Depth (inches)	Channel Substrate	Velocity	Clarity	Length in Study Area (feet)	Jurisdictional Classification	Compensatory Mitigation Required
20SD	UT to Goodland Branch	18-81-8	C;Sw	0.5–1	3–4	0–6	Silt/Sand	Slow	Clear	214	Intermittent	Yes
20SE	UT to Goodland Branch	18-81-8	C;Sw	0.5–1	3–4	0–6	Silt/Sand	Slow	Clear	1,469	Perennial	Yes
20SF	UT to Goodland Branch	18-81-8	C;Sw	0.5–1	2–3	0–6	Silt/Sand	Moderate	Clear	581	Intermittent	Yes
20SY	UT to Town Creek	18-81	C;Sw	0.5–1	3–5	4–12	Silt/Sand	Slow	Slightly Turbid	612	Perennial	Yes
Greenfield Creek	Greenfield Creek	18-76	SC;Sw	4–6	10–15	12–24	Silt/Sand	Moderate	Turbid	1,080	Perennial	Yes
26SB	UT to Greenfield Creek	18-76	SC;Sw	4–6	10–15	12–24	Silt/Sand	Moderate	Turbid	1,004	Perennial	Yes
26SC	UT to Greenfield Creek	18-76	SC;Sw	4–5	10	12–24	Si/Sa/G	Moderate	Slightly Turbid	114	Perennial	Yes
5XSA	UT to Piney Branch	18-77-3-1	C;Sw	1–2	3–4	6–12	Silt/Sand	Moderate	Clear	845	Perennial	Yes
5XSB	UT to Piney Branch	18-77-3-1	C;Sw	4–6	8–10	6–18	Silt/Sand	Moderate	Clear	183	Perennial	Yes
9XSB	UT to Greenfield Lake	18-76-1	C;Sw	6–8	10–12	6–18	Si/Sa/G	Moderate	Clear	285	Perennial	Yes
9XSC	UT to Greenfield Lake	18-76-1	C;Sw	0.5–1	2–3	0–6	Silt/Sand	Slow	Clear	481	Intermittent	Yes
29XSA	UT to Sturgeon Creek	18-77-1	C;Sw	1–1.5	3–4	4–12	Silt/Sand	Moderate	Clear	166	Intermittent	Yes
										133	Perennial	
29XSB	UT to Sturgeon Creek	18-77-1	C;Sw	1–1.5	3–4	2–8	Silt/Sand	Moderate	Clear	236	Perennial	Yes
32XSA	UT to Jackeys Creek	18-77-3	C;Sw	6–8	8–10	6–12	Silt	Slow	Clear	913	Perennial	Yes
32XSB	UT to Jackeys Creek	18-77-3	C;Sw	6–8	10–12	6–12	Silt	Moderate	Clear	1,231	Perennial	Yes

Source: NCDOT (2017c).

UT = Unnamed Tributary

^a Feature drawn from GIS/topographic map due to flooded site conditions at time of field surveys.

^b Feature added from R-2633A delineations after field surveys were completed.

^c Feature partially drawn from GIS/topographic map due to flooded site conditions at time of field surveys.'

No North Carolina Section 303(d) streams listed for sedimentation and/or turbidity are within 1 mile of the project study area. Additionally, no benthic and/or fish monitoring sites are within 1 mile downstream of the project study area. North Carolina Division of Marine Fisheries (NCDMF) maps indicate the Cape Fear River as coastal anadromous fish spawning areas (AFSA) in the project study area (North Carolina Department of Environmental Quality [NCDEQ] 2008). The Brunswick River is listed as joint AFSA waters between NCDMF and the North Carolina Wildlife Resources Commission (NCWRC) in the project study area. Alligator Creek is also listed as inland AFSA water under the jurisdiction of NCWRC within the project study area. Additionally, NCDMF lists the Cape Fear and Brunswick rivers as primary nursery areas (PNA) within the project study area.

3.5.3.2 Ponds

Fifty-three ponds and one named lake (Greenfield Lake) are located in the detailed study alternative corridors. The name and location of each pond is shown on Figure 3-12 through Figure 3-28 and a full description of each pond is provided in the NRTR (NCDOT 2017c). In addition to the ponds, 62 surface waters in the project study area were identified by the US Army Corps of Engineers (USACE) as tributaries to Waters of the United States. These features were not assigned an individual map ID.

3.5.3.3 Wetlands

One hundred and thirty-eight jurisdictional wetlands were identified within the detailed study alternative corridors, as shown on Figure 3-12 through Figure 3-28. Wetland classification and quality rating data are presented in Table 3-12. All wetlands in the project study area are within the Cape Fear River basin (USGS Hydrologic Unit 03030005) (NCDOT 2017c).

3.5.4 Jurisdictional Issues

3.5.4.1 Wetlands

Section 404 of the Clean Water Act (CWA) requires regulation of discharges into “Waters of the United States.” USEPA is the principal administrative agency of the CWA; however, USACE is responsible for implementation, permitting, and enforcement of the CWA.

Surface waters (lakes, rivers, and streams) and wetlands are subject to jurisdictional consideration under Section 404 of the CWA. Section 401 of the CWA grants authority to individual states for regulation of discharges into “Waters of the United States.” Wetlands, streams, and ponds are shown on Figure 3-12 through Figure 3-28.

3.5.4.2 Protected Species

Federally listed endangered and threatened species are legally protected under the provisions of Section 7 of the Endangered Species Act (ESA) of 1973, as amended. As a result, any action that is likely to adversely affect a federally-protected species is subject to review by the US Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS).

Table 3-12: Jurisdictional Characteristics of Wetlands in the Study Area

Map ID	NCWAM Classification	Hydrologic Classification	DWQ Wetland Rating	Acres in Study Area
1WR	Pocosin	Non-riparian	32	113.0
1WS	Pocosin	Non-riparian	24	6.2
1WT	Headwater Forest	Riparian	24	0.6
1WV	Headwater Forest	Non-riparian	23	8.6
1WW	Pocosin	Non-riparian	31	7.4
1WX	Headwater Forest	Non-riparian	23	0.4
1WY	Pine Flat	Non-riparian	40	32.6
1WZ	Pocosin	Non-riparian	27	2.2
2WA	Pine Flat	Non-riparian	31	75.9
2WB	Headwater Forest	Non-riparian	13	3.8
2WC	Bottomland Hardwood Forest	Riparian	47	4.6
2WE	Headwater Forest	Non-riparian	10	0.0
3WA	Headwater Forest	Riparian	64	4.5
	Riverine Swamp Forest			28.6
3WB	Pocosin	Non-riparian	14	1.5
3WC	Headwater Forest	Riparian	25	1.4
3WD	Pocosin	Non-riparian	18	1.1
3WE	Pocosin	Non-riparian	4	0.2
3WF	Pocosin	Non-riparian	4	0.1
3WG	Non-Riverine Swamp Forest	Riparian	59	7.1
3WH	Pocosin	Non-riparian	14	0.5
3WI	Pocosin	Riparian	23	0.3
3WJ	Headwater Forest	Riparian	23	1.0
5WD	Headwater Forest	Non-riparian	16	3.3
5WF	Headwater Forest	Non-riparian	8	0.1
5WG	Headwater Forest	Non-riparian	8	0.1
5WH	Headwater Forest	Riparian	37	16.5
5WI	Headwater Forest	Riparian	13	1.0
5WJ	Pine Flat	Non-riparian	30	2.9
5WK	Pocosin	Non-riparian	4	0.0
5WL	Bottomland Hardwood Forest	Riparian	42	8.7
5WM	Pocosin	Non-riparian	10	0.1

Table 3-12: Jurisdictional Characteristics of Wetlands in the Study Area

Map ID	NCWAM Classification	Hydrologic Classification	DWQ Wetland Rating	Acres in Study Area
5WO	Salt/Brackish Marsh	Tidal	56	9.6
5WP	Headwater Forest	Riparian	18	0.8
5WQ	Headwater Forest	Riparian	18	0.3
6WA ^a	Seep	Riparian	10	0.1
6WB	Headwater Forest	Riparian	10	2.1
6WC	Bottomland Hardwood Forest	Riparian	28	0.9
6WD	Pocosin	Non-riparian	14	0.5
6WE	Pocosin	Non-riparian	14	14.5
6WF	Pocosin	Non-riparian	18	2.3
6WG	Pocosin	Non-riparian	26	31.8
7WA	Headwater Forest	Non-riparian	10	2.3
7WB	Hardwood Flat	Non-riparian	47	62.6
7WC	Headwater Forest	Non-riparian	16	0.7
7WD	Pocosin	Non-riparian	24	8.0
7WE	Headwater Forest	Non-riparian	26	13.9
7WF	Bottomland Hardwood Forest	Riparian	49	2.2
7WG	Headwater Forest	Riparian	16	0.6
8WA	Salt/Brackish Marsh	Tidal	70	47.8
8WB	Headwater Forest	Riparian	28	2.3
8WC	Non-Riverine Swamp Forest	Riparian	20	1.4
8WD	Bottomland Hardwood Forest	Riparian	24	1.1
8WE	Basin Wetland	Non-riparian	11	0.3
9WA	Salt/Brackish Marsh	Tidal	70	270.5
9WB	Estuarine Woody Wetland	Tidal	74	94.2
10WA	Riverine Swamp Forest	Riparian	68	52.5
10WB	Riverine Swamp Forest	Riparian	60	10.4
10WC	Bottomland Hardwood Forest	Riparian	33	2.5
10WD	Headwater Forest	Non-riparian	10	1.6
10WE	Bottomland Hardwood Forest	Riparian	35	3.8
10WF	Pocosin	Non-riparian	20	6.4
10WG	Headwater Forest	Riparian	28	0.6
10WH/WI	Headwater Forest	Riparian	31	1.5

Table 3-12: Jurisdictional Characteristics of Wetlands in the Study Area

Map ID	NCWAM Classification	Hydrologic Classification	DWQ Wetland Rating	Acres in Study Area
10WJ	Headwater Forest	Riparian	31	0.6
10WK	Headwater Forest	Non-riparian	16	0.3
10WL	Seep	Riparian	16	0.0
10WM	Headwater Forest	Riparian	48	2.8
10WN	Headwater Forest	Non-riparian	27	0.8
10WO	Headwater Forest	Non-riparian	18	0.2
10WP	Pocosin	Non-riparian	26	3.1
10WQ	Headwater Forest	Non-riparian	18	0.4
10WR	Non-Riverine Swamp Forest	Riparian	22	0.7
10WS	Seep	Non-riparian	14	0.1
10WT	Headwater Forest	Non-riparian	18	0.8
10WU	Headwater Forest	Non-riparian	45	2.1
13WA	Salt/Brackish Marsh	Tidal	42	2.7
13WD	Salt/Brackish Marsh	Tidal	42	1.5
14WA	Headwater Forest	Riparian	27	5.8
14WB	Headwater Forest	Non-riparian	20	3.3
14WC	Pocosin	Non-riparian	12	0.2
15WA	Riverine Swamp Forest	Riparian	64	88.0
15WB	Basin Wetland	Non-riparian	10	0.2
20WA	Riverine Swamp Forest	Riparian	43	2.8
20WB	Headwater Forest	Non-riparian	24	0.6
20WC	Headwater Forest	Non-riparian	39	2.8
20WD	Pine Flat	Non-riparian	56	8.3
20WF	Pocosin	Non-riparian	53	0.2
	Pine Flat			42.2
20WG	Bottomland Hardwood Forest	Riparian	53	8.2
20WH	Riverine Swamp Forest	Riparian	30	2.9
20WI	Riverine Swamp Forest	Riparian	30	2.3
20WJ	Headwater Forest	Riparian	21	2.2
20WK	Headwater Forest	Riparian	21	0.8
20WL	Pine Flat	Non-riparian	46	24.0
20WM	Headwater Forest	Non-riparian	17	1.0

Table 3-12: Jurisdictional Characteristics of Wetlands in the Study Area

Map ID	NCWAM Classification	Hydrologic Classification	DWQ Wetland Rating	Acres in Study Area
20WZ	Pine Flat	Non-riparian	36	18.5
21WA	Headwater Forest	Non-riparian	22	4.9
21WB	Headwater Forest	Non-riparian	16	0.2
21WC	Basin Wetland	Non-riparian	16	0.2
21WD	Headwater Forest	Non-riparian	36	1.6
21WE	Headwater Forest	Non-riparian	32	0.5
21WF	Salt/Brackish Marsh	Tidal	64	13.5
21WG	Pine Flat	Non-riparian	17	12.4
21WH	Headwater Forest	Non-riparian	16	0.5
21WI	Pocosin	Non-riparian	14	1.3
21WJ	Headwater Forest	Non-riparian	18	3.5
21WK	Pocosin	Non-riparian	22	2.2
22WA	Salt/Brackish Marsh	Tidal	0	362.9
26WA	Riverine Swamp Forest	Riparian	34	14.1
26WB	Headwater Forest	Non-riparian	19	0.2
26WC	Riverine Swamp Forest	Riparian	25	0.4
26WD	Salt/Brackish Marsh	Tidal	57	0.8
1XWB	Headwater Forest	Riparian	34	0.5
1XWC	Headwater Forest	Riparian	36	0.5
3XWA	Headwater Forest	Riparian	27	0.7
3XWC	Non-Tidal Freshwater Marsh	Riparian	49	1.3
5XWA	Headwater Forest	Riparian	26	0.5
6XWA	Headwater Forest	Riparian	19	0.2
6XWB	Headwater Forest	Riparian	24	5.2
6XWC	Pocosin	Non-riparian	11	0.2
6XWD	Headwater Forest	Riparian	23	1.0
9XWA	Headwater Forest	Riparian	72	0.6
13XWA	Basin Wetland	Non-riparian	16	0.4
13XWB	Basin Wetland	Non-riparian	13	0.1
13XWC	Basin Wetland	Non-riparian	18	0.1
21XWA	Pine Flat	Non-riparian	20	13.0
28XWA	Pine Flat	Non-riparian	19	0.2

Table 3-12: Jurisdictional Characteristics of Wetlands in the Study Area

Map ID	NCWAM Classification	Hydrologic Classification	DWQ Wetland Rating	Acres in Study Area
28XWB	Hardwood Flat	Non-riparian	39	1.0
28XWC	Headwater Forest	Non-riparian	21	0.1
29XWA	Headwater Forest	Riparian	44	0.4
32XWA	Headwater Forest	Riparian	40	0.9
33XWA	Headwater Forest	Riparian	30	0.2
35XWB	Headwater Forest	Riparian	48	0.3
35XWC	Headwater Forest	Riparian	29	0.6
47XWA	Headwater Forest	Riparian	47	0.1
48XWA	Non-Riverine Swamp Forest	Non-riparian	53	1.5
51XWA	Bottomland Hardwood Forest	Riparian	28	9.9
51XWB	Bottomland Hardwood Forest	Non-riparian	20	0.1
52XWA	Headwater Forest	Non-riparian	23	0.6
			Total	1,674.2

Source: NCDOT (2017c).

^a Feature added from R-2633A delineations after field surveys were completed.

As of April 25, 2018 (Brunswick County) and June 27, 2018 (New Hanover County), USFWS lists 14 federally protected species for Brunswick County and 15 federally protected species for New Hanover County, as shown in Table 3-13. This section includes a brief description of each species' habitat requirements. As of the aforementioned dates, USFWS does not list any candidate species for Brunswick or New Hanover counties. The shortnose sturgeon and Atlantic sturgeon were previously listed as federally protected species by the USFWS; however, they are now listed by National Oceanic and Atmospheric Administration (NOAA) Fisheries. On August 16, 2017, the NMFS designated the Cape Fear River as Critical Habitat for the Atlantic sturgeon. As of August 15, 2017, NMFS lists alewife and blueback herring (collectively known as river herring) as candidate species throughout their range, which includes all designated AFSA waters in the project study area.

Atlantic Sturgeon

The Atlantic sturgeon is a large fish that occurs in major river systems along the eastern seaboard of the United States. It is an anadromous species that migrates to moderately-moving freshwater areas to spawn in the spring; in some southern rivers a fall spawning migration may also occur. Spawning occurs in moderately flowing water in deep parts of large rivers, usually on hard surfaces (e.g., cobble). Juveniles usually reside in estuarine waters. Subadults and adults live in coastal waters and estuaries when not spawning, generally in shallow nearshore areas dominated by gravel and sand substrates.

Table 3-13: Federally Protected Species Listed for Brunswick and New Hanover Counties

Scientific Name	Common Name	Federal Status ^a	Habitat Present	County
<i>Acipenser oxyrinchus oxyrinchus</i>	Atlantic sturgeon	E	Yes	Brunswick and New Hanover
<i>Acipenser brevirostrum</i>	Shortnose sturgeon	E	Yes	Brunswick and New Hanover
<i>Alligator mississippiensis</i>	American alligator	T(S/A)	Yes	Brunswick and New Hanover
<i>Calidris canutus rufa</i>	Rufa red knot	T	No	Brunswick and New Hanover
<i>Caretta caretta</i>	Loggerhead sea turtle	T	Yes	Brunswick and New Hanover
<i>Charadrius melodus</i>	Piping plover	T	No	Brunswick and New Hanover
<i>Chelonia mydas</i>	Green sea turtle	T	No	Brunswick and New Hanover
<i>Dermochelys coriacea</i>	Leatherback sea turtle	E	No	Brunswick and New Hanover
<i>Eretmochelys imbricata</i>	Hawksbill sea turtle	E	No	Brunswick and New Hanover
<i>Lepidochelys kempii</i>	Kemp's ridley sea turtle	E	No	Brunswick and New Hanover
<i>Mycteria americana</i>	Wood stork	E	Yes	Brunswick
<i>Myotis septentrionalis</i>	Northern long-eared bat	T	Yes	New Hanover
<i>Picoides borealis</i>	Red-cockaded woodpecker	E	Yes	Brunswick and New Hanover
<i>Trichechus manatus</i>	West Indian manatee	E	Yes	Brunswick and New Hanover
<i>Amaranthus pumilus</i>	Seabeach amaranth	T	No	Brunswick and New Hanover
<i>Carex lutea</i>	Golden sedge	E	Yes	New Hanover
<i>Lysimachia asperulaefolia</i>	Rough-leaved loosestrife	E	Yes	Brunswick and New Hanover
<i>Thalictrum cooleyi</i>	Cooley's meadowrue	E	Yes	Brunswick and New Hanover

Source: NCDOT (2017c).

^a E = Endangered; T = Threatened; T(S/A) = Threatened due to similarity of appearance

Shortnose Sturgeon

Shortnose sturgeon occur in most major river systems along the eastern seaboard of the United States. The species prefers the nearshore marine, estuarine, and riverine habitat of large river systems. It is an anadromous species that migrates to faster-moving freshwater areas to spawn in the spring, but spends most of its life within close proximity of the river's mouth. Large freshwater rivers that are unobstructed by dams or pollutants are imperative to successful reproduction. Distribution information by river/waterbody is lacking for the rivers of North Carolina; however, records are known from most coastal counties.

American Alligator

In North Carolina, alligators have been recorded in nearly every coastal county and many inland counties to the fall line. The alligator is found in rivers, streams, canals, lakes, swamps, and coastal marshes. Adult animals are highly tolerant of salt water, but the young are apparently more sensitive, with salinities greater than five parts per thousand considered harmful. The American alligator remains on the protected species list due to its similarity in appearance to the endangered American crocodile.

Rufa Red Knot

The rufa red knot is one of the six recognized subspecies of red knots, and is the only subspecies that routinely travels along the Atlantic coast of the United States during spring and fall migrations. It is known to winter in North Carolina and to stop over during migration. Habitats used by red knots in migration and wintering areas are similar in character: coastal marine and estuarine habitats with large areas of exposed intertidal sediments. In North America, red knots are commonly found along sandy, gravel, or cobble beaches; tidal mudflats; salt marshes; shallow coastal impoundments and lagoons; and peat banks. Ephemeral features such as sand spits, islets, shoals, and sandbars, often associated with inlets, can be important habitat for roosting.

Loggerhead Sea Turtle

The loggerhead sea turtle is widely distributed within its range, and is found in three distinct habitats during their lives. These turtles may be found hundreds of miles out in the open ocean, in shoreline areas, or on coastal beaches. In North Carolina, this species has been observed in every coastal county. Loggerheads occasionally nest on North Carolina beaches, and are the most common of all the sea turtles that visit the North Carolina coast. They nest nocturnally, at two to three year intervals, between May and September, on isolated beaches that are characterized by fine-grained sediments. In near shore areas, loggerheads have been observed in bays, lagoons, salt marshes, creeks, ship channels, and the mouths of large rivers. Coral reefs, rocky places, and shipwrecks are often used as foraging areas.

Piping Plover

The piping plover breeds along the entire eastern coast of the United States. North Carolina is uniquely positioned in the species' range, being the only state where the piping plover's breeding and wintering ranges overlap and the birds are present year-round. They nest most commonly where there is little or

no vegetation, but some may nest in stands of beach grass. The nest is a shallow depression in the sand that is usually lined with shell fragments and light-colored pebbles.

Green Sea Turtle

The green sea turtle is found in temperate and tropical oceans and seas. Nesting in North America is limited to small communities on the east coast of Florida on beaches with minimal disturbances and a sloping platform for nesting (they do not nest in North Carolina). The green sea turtle can be found in shallow waters. They are attracted to lagoons, reefs, bays, mangrove swamps, and inlets where an abundance of marine grasses can be found, as this is the principal food source for the green turtle.

Leatherback Sea Turtle

Leatherback sea turtles are distributed worldwide in tropical waters of the Atlantic, Pacific, and Indian oceans. They are generally an open ocean species, and may be common off the North Carolina coast during certain times of the year. However, in northern waters leatherbacks are reported to enter into bays, estuaries, and other inland bodies of water. Major nesting areas occur mainly in tropical regions. In the United States, primary nesting areas are in Florida; however, nests occur in Georgia, South Carolina, and North Carolina as well. Nesting occurs from April to August. Leatherbacks need sandy beaches backed with vegetation in the proximity of deep water and generally with rough seas. Beaches with a relatively steep slope are usually preferred.

Hawksbill Sea Turtle

Hawksbill sea turtles are found in tropical and subtropical oceans. Sightings have been reported on the east coast of the United States as far north as Massachusetts, although rarely north of Florida. Sightings have been recorded from a handful of counties in North Carolina, but the turtle is not known to breed here. Adult hawksbills are found in coastal waters, especially around coral reefs, rocky outcrops, shoals, mangrove bays, and estuaries. Juveniles are often seen offshore in floating mats of seaweed. This species nests on a wide range of beach types and substrates, using both low- and high-energy beaches on islands and mainland sites.

Kemp's Ridley Sea Turtle

Kemp's ridley sea turtle is the smallest of the sea turtles that visit North Carolina's coast, and has been sighted in most coastal counties. While the majority of this sea turtle's nesting occurs in Mexico, the species is known to nest on North Carolina beaches infrequently. The species has been sighted in most coastal counties. Kemp's ridley sea turtle can lay eggs as many as three times during the April to June breeding season. Kemp's ridley sea turtles prefer beach sections that are backed up by extensive swamps or large bodies of open water, having seasonal narrow ocean connections and a well-defined elevated dune area.

Wood Stork

Wood storks are known to occur in several coastal North Carolina counties, and records indicate that they have been breeding in North Carolina since 2005. Wood storks typically construct their nests in

medium to tall trees that occur in stands located either in swamps or on islands surrounded by relatively broad expanses of open water. In many areas, bald cypress and red mangrove trees are preferred. During the nonbreeding season or while foraging, wood storks occur in a wide variety of wetland habitats, including freshwater marshes and stock ponds, shallow, seasonally flooded roadside or agricultural ditches, narrow tidal creeks or shallow tidal pools, managed impoundments, and depressions in cypress heads and swamp sloughs. Because of their specialized feeding behavior, the most attractive feeding areas are swamp or marsh depressions where fish become concentrated during dry periods.

Northern Long-Eared Bat

In North Carolina, the northern long-eared bat (NLEB) occurs in the mountains, with scattered records in the Piedmont and coastal plain. In western North Carolina, NLEB spend the winter hibernating in caves and mines. Since this species is not known to be a long-distance migrant, and caves and subterranean mines are extremely rare in eastern North Carolina, it is uncertain whether or where NLEB hibernate in eastern North Carolina. During the summer, NLEB roost singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees (typically greater than or equal to 3 inches diameter at breast height). Males and non-reproductive females may also roost in cooler places, like caves and mines. This bat also been found, rarely, roosting in structures like barns and sheds, under eaves of buildings, behind window shutters, in bridges, and in bat houses. Foraging occurs on forested hillsides and ridges, and occasionally over forest clearings, over water, and along tree-lined corridors. Mature forests may be an important habitat type for foraging.

Red-cockaded Woodpecker

The red-cockaded woodpecker (RCW) typically occupies open, mature stands of southern pines, particularly longleaf pine, for foraging and nesting/roosting habitat. The RCW excavates cavities for nesting and roosting in living pine trees, aged 60 years or older, and that are contiguous with pine stands at least 30 years of age to provide foraging habitat. The foraging range of the RCW is normally no more than 0.5 mile.

West Indian Manatee

Manatees have been observed in all the North Carolina coastal counties. Manatees are found in canals, sluggish rivers, estuarine habitats, salt water bays, and as far off shore as 3.7 miles. They utilize freshwater and marine habitats at shallow depths of 5 to 20 feet. In the winter, between October and April, manatees concentrate in areas with warm water. During other times of the year habitats appropriate for the manatee are those with sufficient water depth, an adequate food supply, and in proximity to freshwater. Manatees require a source of fresh water to drink. Manatees are primarily herbivorous, feeding on any aquatic vegetation, but they may occasionally feed on fish.

Seabeach Amaranth

Seabeach amaranth occurs on barrier island beaches where its primary habitat consists of overwash flats at accreting ends of islands, lower foredunes, and upper strands of noneroding beaches (landward

of the wrack line). In rare situations, this annual is found on sand spits 160 feet or more from the base of the nearest foredune. It occasionally establishes small temporary populations in other habitats, including sound-side beaches, blowouts in foredunes, interdunal areas, and on sand and shell material deposited for beach replenishment or as dredge spoil. The plant's habitat is sparsely vegetated with annual herbs (forbs) and, less commonly, perennial herbs (mostly grasses) and scattered shrubs. It is, however, intolerant of vegetative competition and does not occur on well-vegetated sites. The species usually is found growing on a nearly pure silica sand substrate, occasionally with shell fragments mixed in. Seabeach amaranth appears to require extensive areas of barrier island beaches and inlets that function in a relatively natural and dynamic manner. These characteristics allow it to move around in the landscape, occupying suitable habitat as it becomes available.

Golden Sedge

Golden sedge, a very rare endemic of the Atlantic coastal plain, grows in sandy soils overlying calcareous deposits of coquina limestone, where the soil pH, typically between 5.5 and 7.2, is unusually high for this region. The perennial prefers the ecotone between the pine savanna and adjacent wet hardwood or hardwood/conifer forest. Most plants occur in the partially shaded savanna/swamp where occasional to frequent fires favor an herbaceous ground layer and suppress shrub dominance. Soils supporting the species are very wet to periodically shallowly inundated. The plant can occur on disturbed areas such as roadside and drainage ditches or power line rights-of-way, where mowing and/or very wet conditions suppress woody plants. Poorly viable populations may occur in significantly disturbed areas where ditching activities that lower the water table and/or some evidence of fire suppression threaten the species. Tulip poplar, pond cypress, red maple, wax myrtle, colic root, and Cooley's meadowrue are a few of its associate species.

Rough-leaved Loosestrife

Rough-leaved loosestrife, endemic to the coastal plain and sandhills of North and South Carolina, generally occurs in the ecotones or edges between longleaf pine uplands and pond pine pocosins in dense shrub and vine growth on moist to seasonally saturated sands and on shallow organic soils overlaying sand (spodosolic soils). Occurrences are found in such disturbed habitats as roadside depressions, maintained power and utility line rights-of-way, firebreaks, and trails. The species prefers full sunlight, is shade intolerant, and requires areas of disturbance (e.g., clearing, mowing, periodic burning) where the overstory is minimal. It can, however, persist vegetatively for many years in overgrown, fire-suppressed areas. Blaney, Gilead, Johnston, Kalmia, Leon, Mandarin, Murville, Torhunta, and Vaucluse are some of the soil series that occurrences have been found on.

Cooley's Meadowrue

Cooley's meadowrue, documented in the Pine Savanna natural community, occurs in circumneutral soils in sunny, moist to wet grass-sedge bogs, wet-pine savannas over calcareous clays, and savannah-like areas, often at the ecotones of intermittent drainages or non-riverine swamp forests. This rhizomatous perennial herb is also found along plowed firebreaks, roadside ditches and rights-of-way, forest clearings dominated by grass or sedge, and power line or utility rights-of-way. The species requires some

type of disturbance (e.g., mowing, clearing, periodic fire) to maintain its open habitat. The plant typically occurs on slightly acidic (pH 5.8 to 6.6) soils that are loamy fine sand, sandy loam, or fine sandy loam; at least seasonally moist or saturated; and mapped as Foreston, Grifton, Muckalee, Torhunta, or Woodington series. Atlantic white cedar, tulip poplar, golden sedge, and bald and pond cypress are a few of its common associate species.

3.5.4.3 Bald Eagle and Golden Eagle Protection Act

Habitat for the bald eagle primarily consists of mature forest in proximity to large bodies of open water for foraging. Large dominant trees are utilized for nesting sites, typically within 1 mile of open water. The Cape Fear River, Brunswick River, and Alligator Creek, as well as their surrounding marshes, are sufficiently open enough to be considered potential feeding sources. However, no individual eagles or their nests were observed in the project study area or within 660 feet of the project study area boundary during field activities in 2014, 2015, or 2016.

3.5.4.4 Essential Fish Habitat

NMFS has identified Cape Fear and Brunswick rivers as essential fish habitats (EFH). Table 3-14 lists the fish species that may occur in the project study area that are managed by NMFS, including the life stages that are reported to occur.

Table 3-14: Commercial Fish Species Reported to Occur in the Project Study Area

Species	Life Stage
Bluefish	Juvenile, Adult
Coastal pelagics (select species)	All
Snapper-grouper complex (select species)	All

Source: NCDOT (2017b).

3.5.4.5 Areas of Environmental Concern

Coastal Area Management Act (CAMA) areas of environmental concern (AEC) were identified in the project study area in the form of public trust waters, estuarine waters, and coastal wetlands. The features designated as AECs are reflected in the NRTR (NCDOT 2017c).

3.5.4.6 Anadromous Fish Habitat

The Cape Fear River, Brunswick River, and Alligator Creek have been designated as coastal, joint, and inland AFSAs, respectively, by NCDMF and NCWRC. Additionally, the Cape Fear and Brunswick rivers are identified as PNAs by NCDMF. These waters are also identified as sturgeon spawning waters by NMFS. On August 16, 2017, the NMFS designated the Cape Fear River as Critical Habitat for the Atlantic sturgeon.

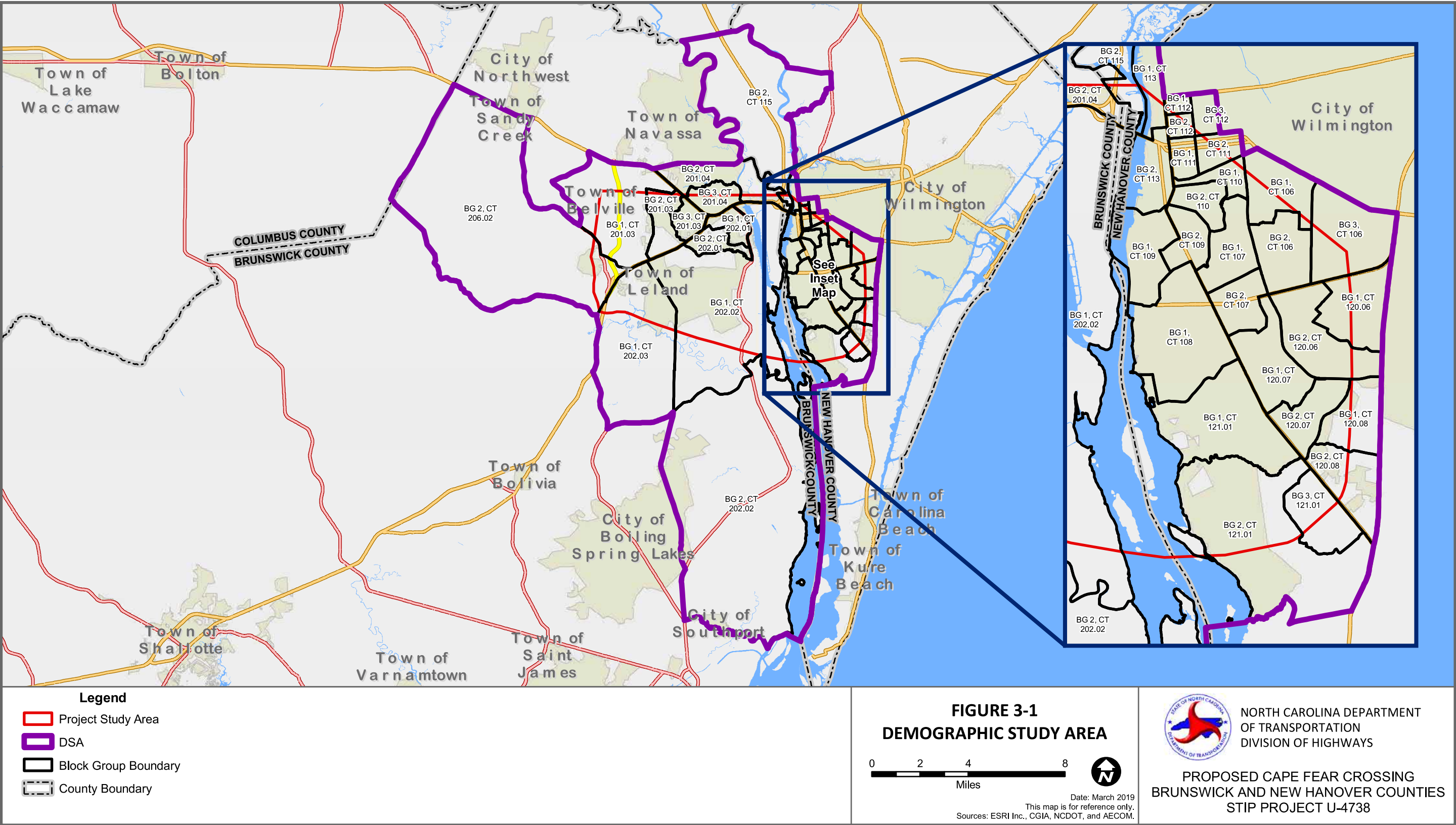


Figure 3-1: Demographic Study Area

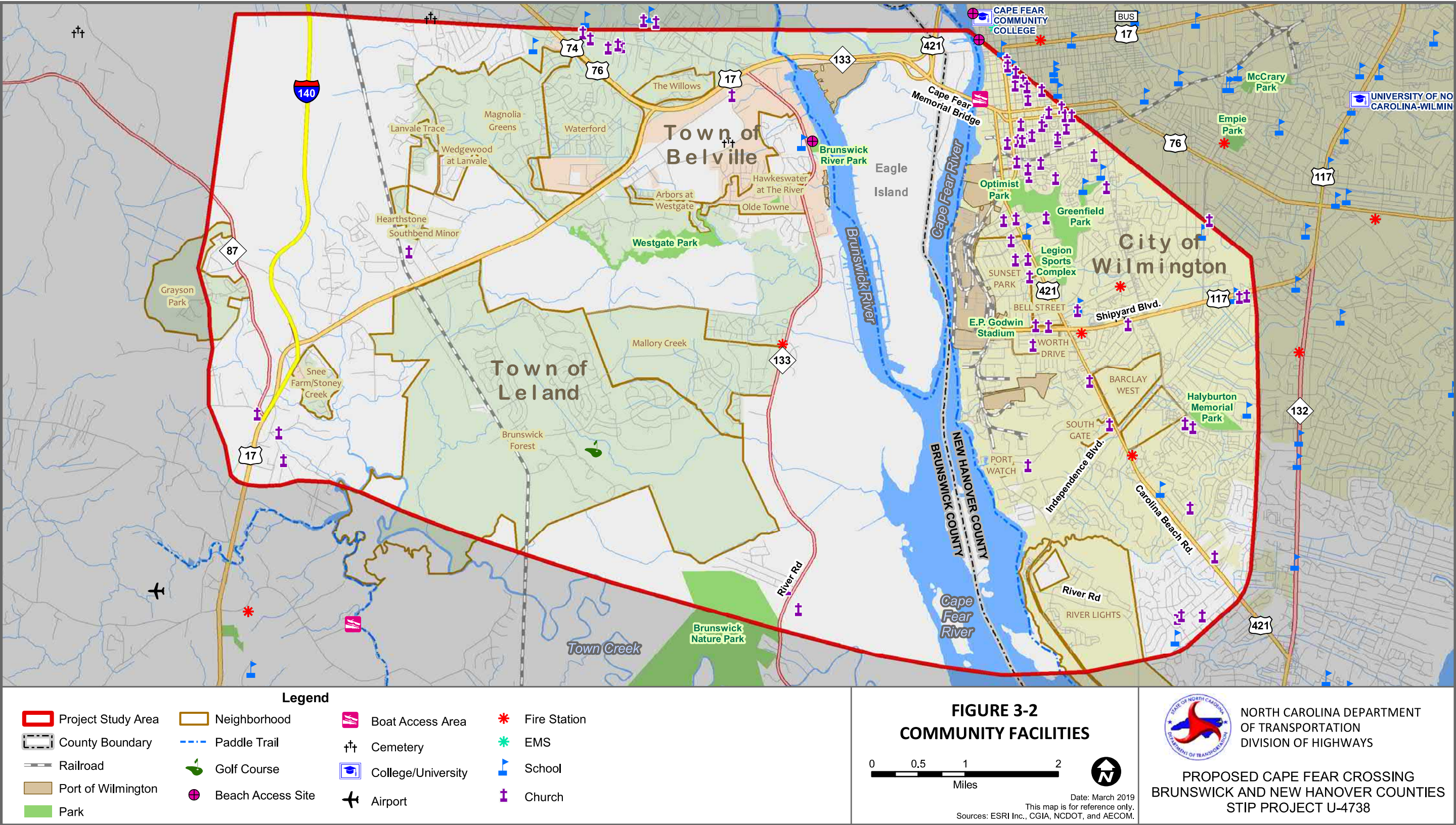


Figure 3-2: Community Facilities

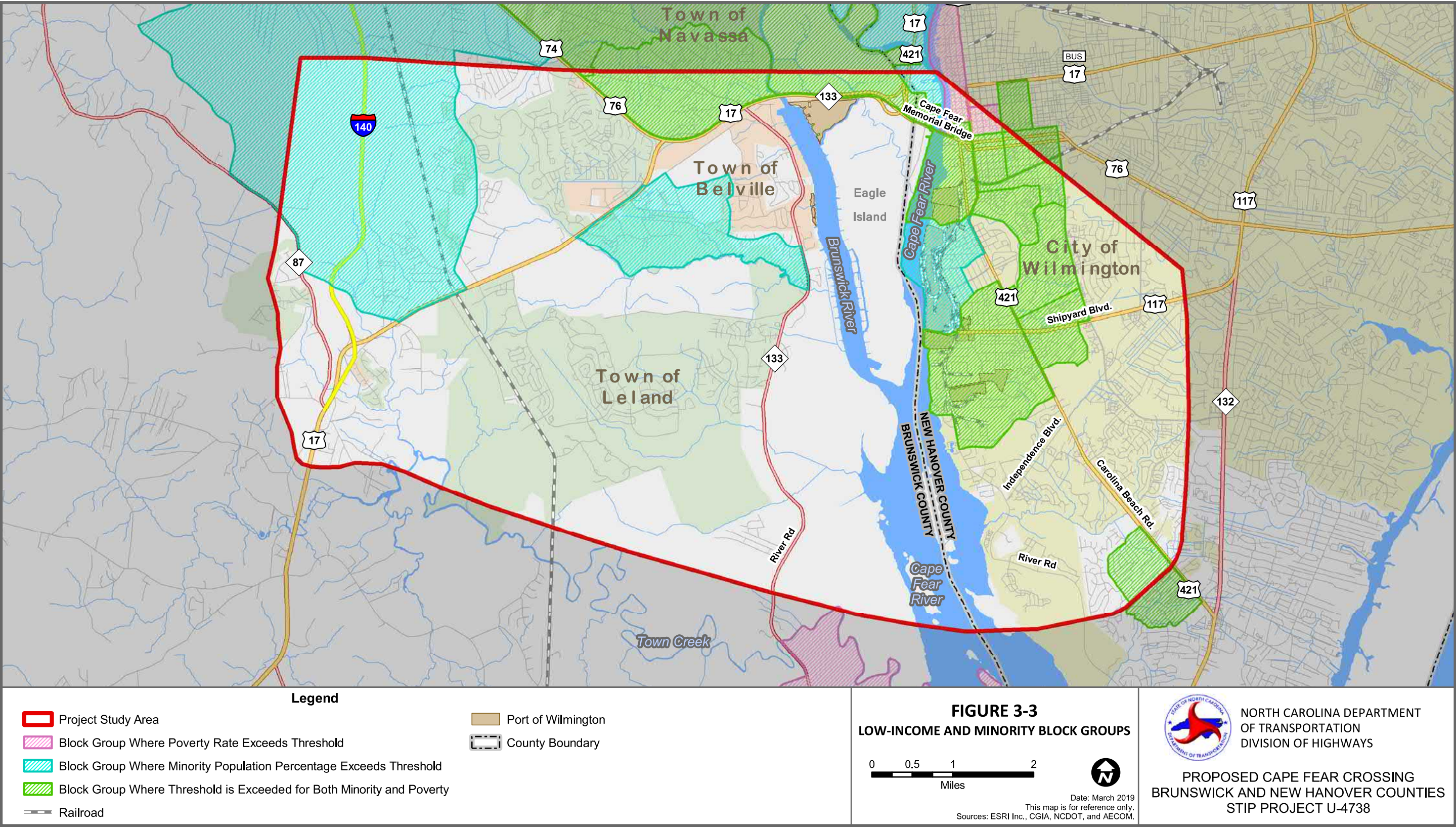


Figure 3-3: Low-Income and Minority Block Groups

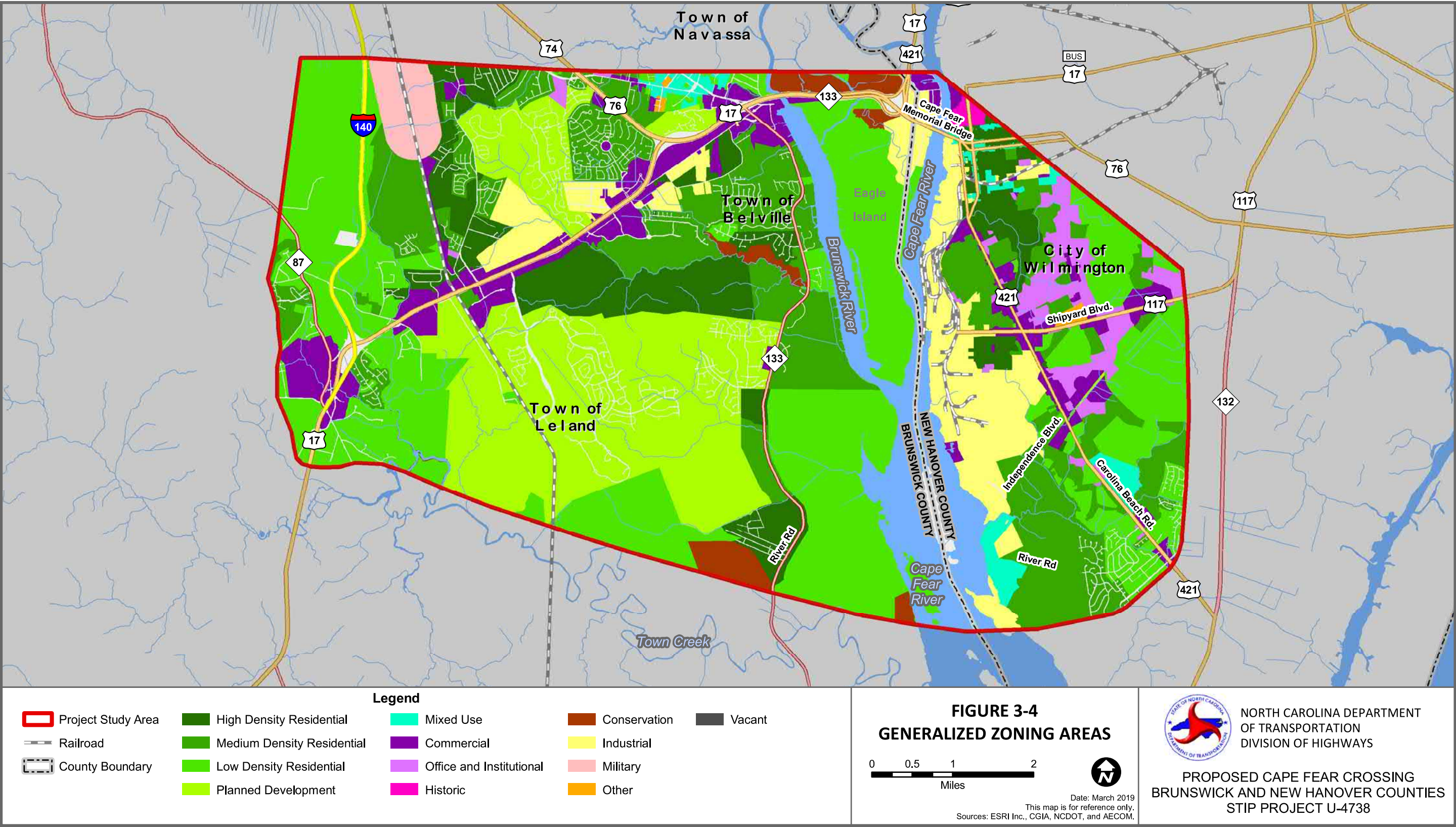


Figure 3-4: Generalized Zoning Areas

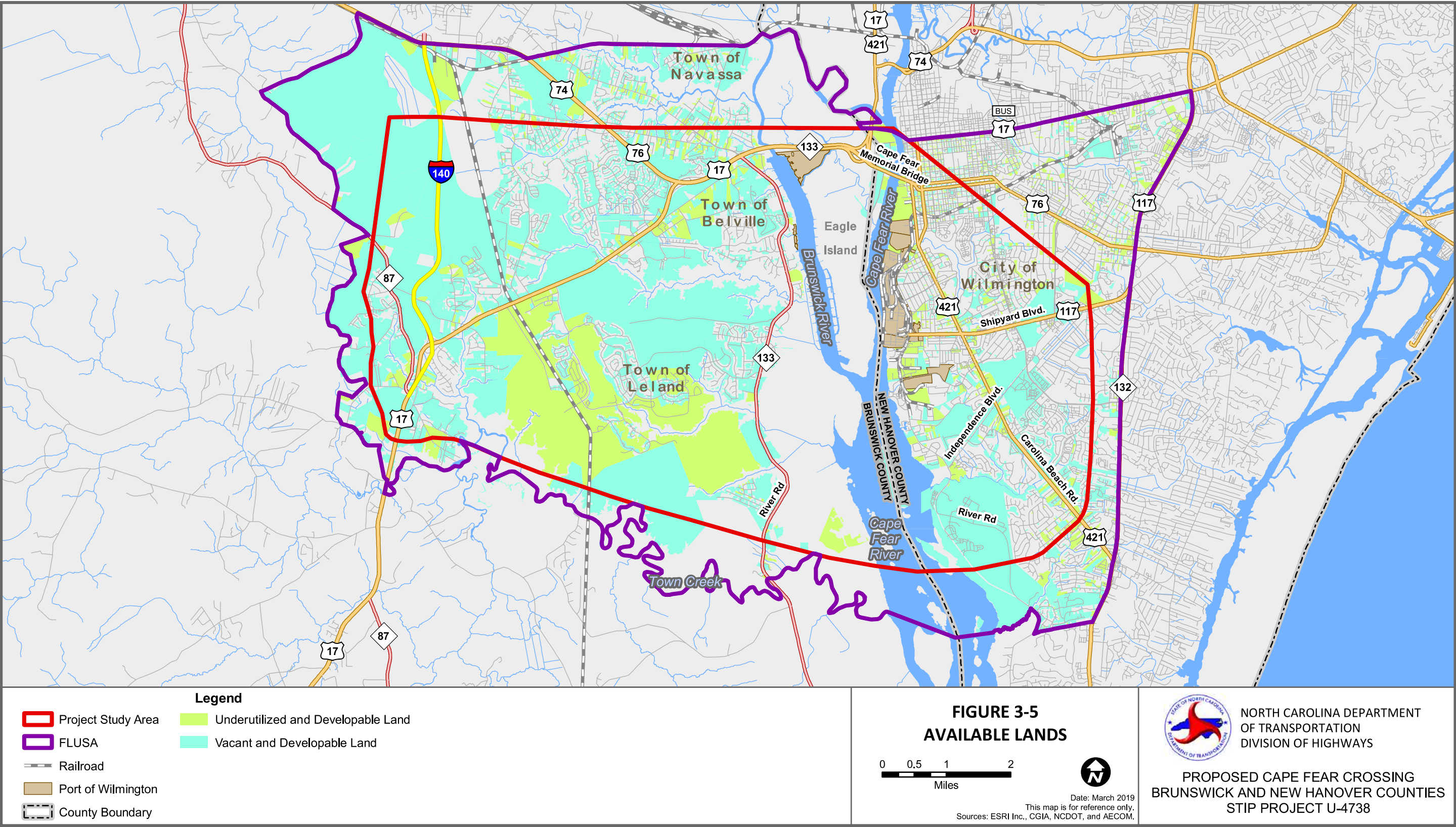


Figure 3-5: Available Lands

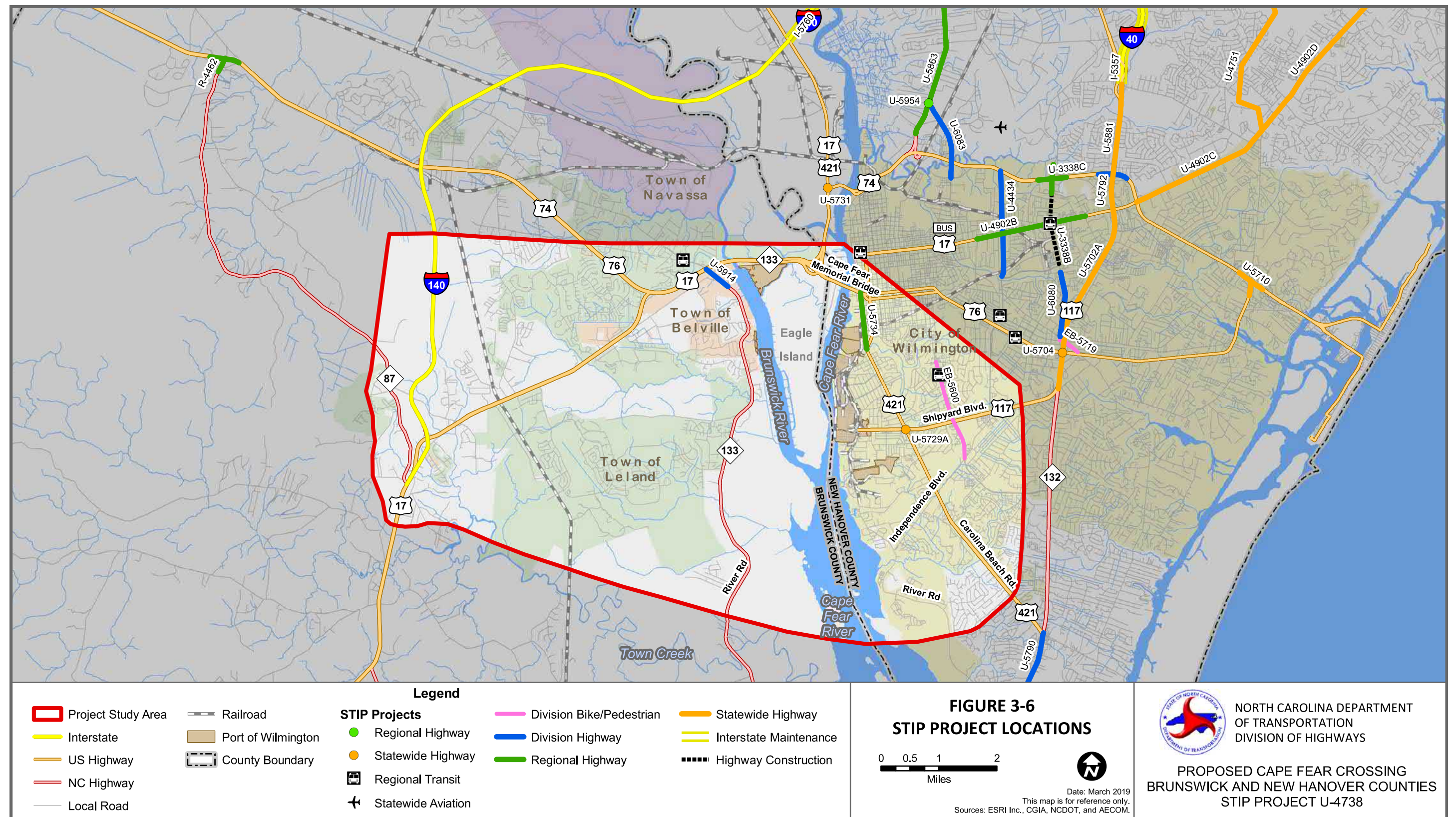


Figure 3-6: STIP Project Locations

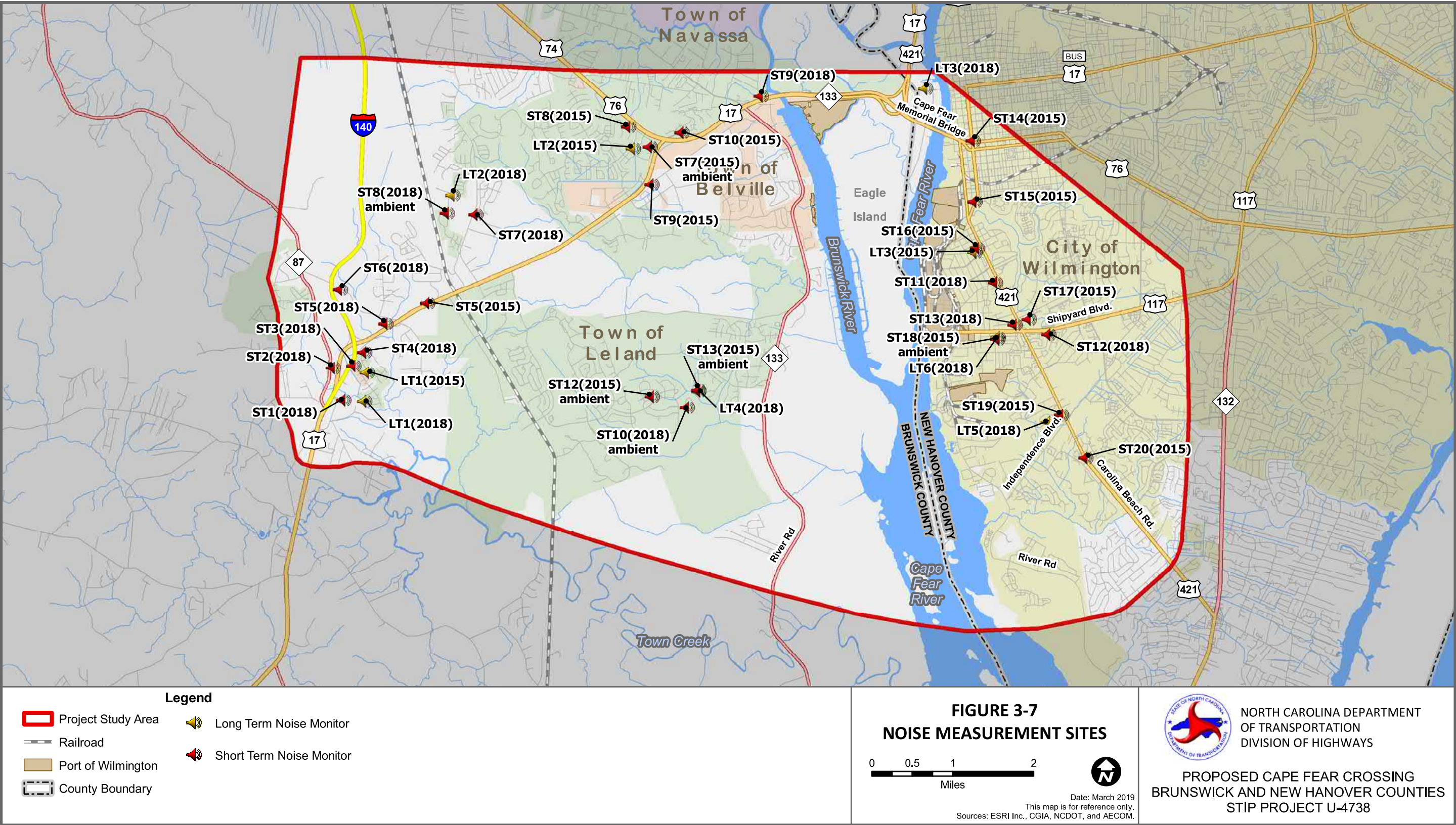


Figure 3-7: Noise Measurement Sites

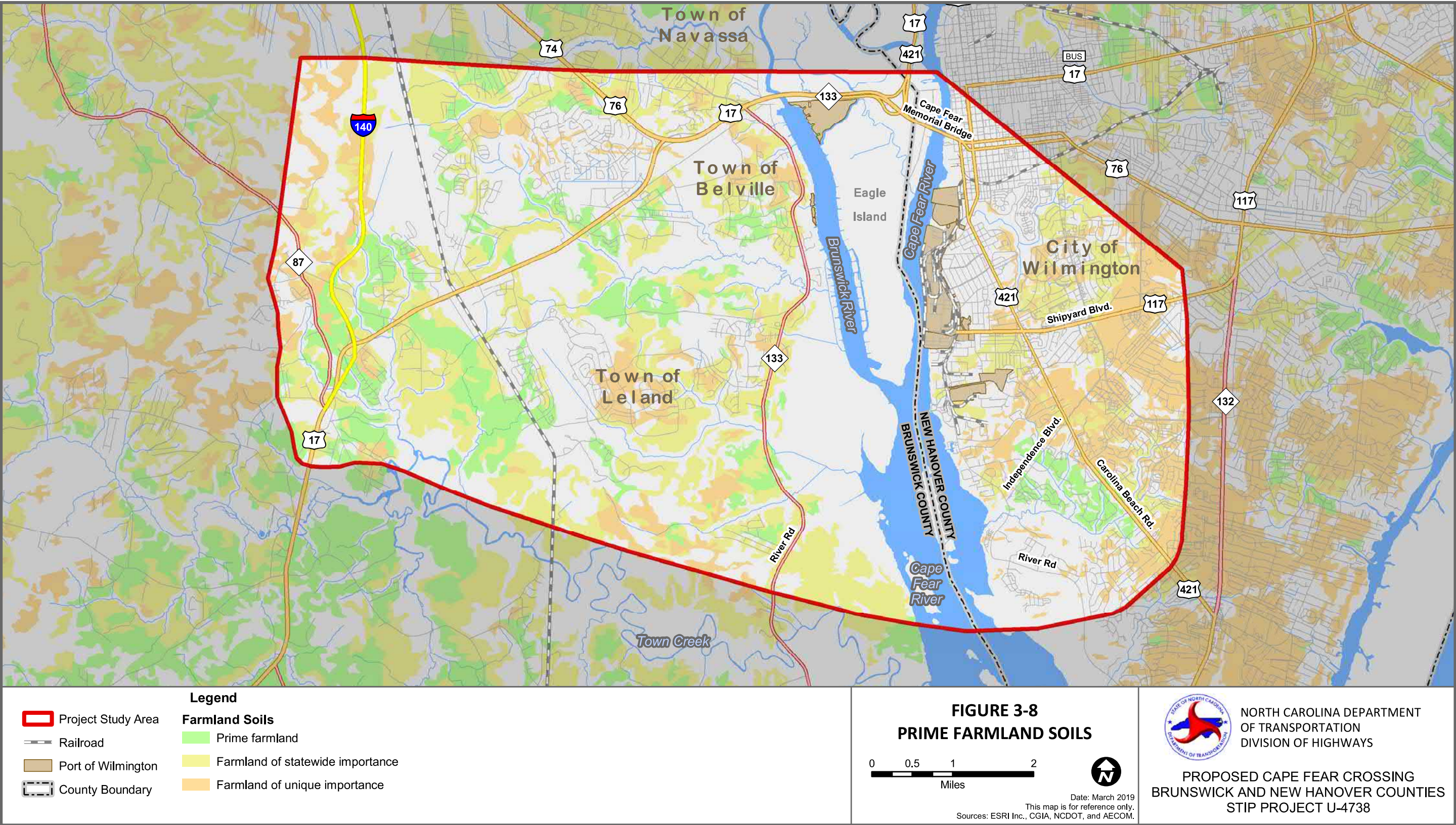


Figure 3-8: Prime Farmland Soils

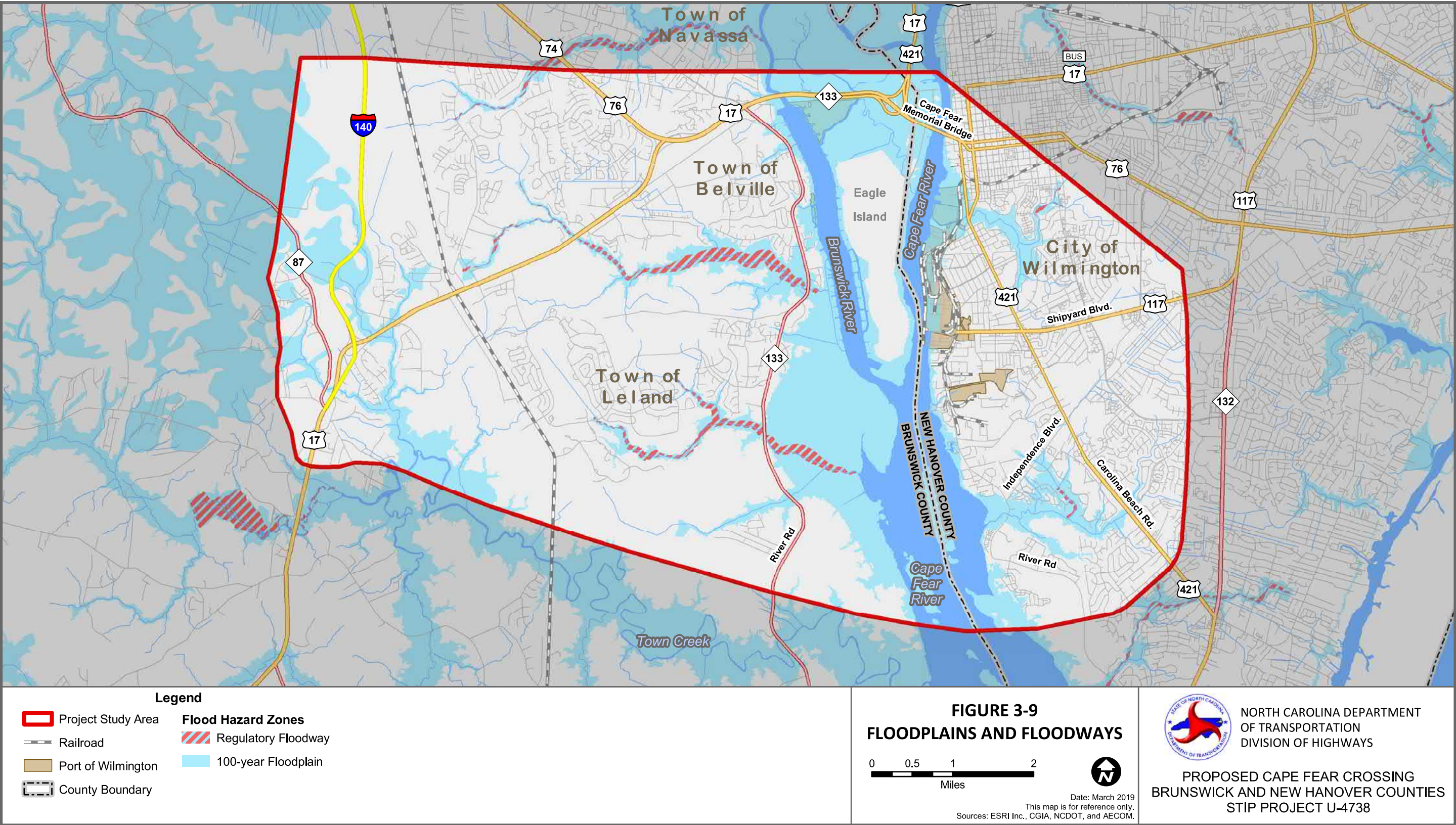


Figure 3-9: Floodplains and Floodways

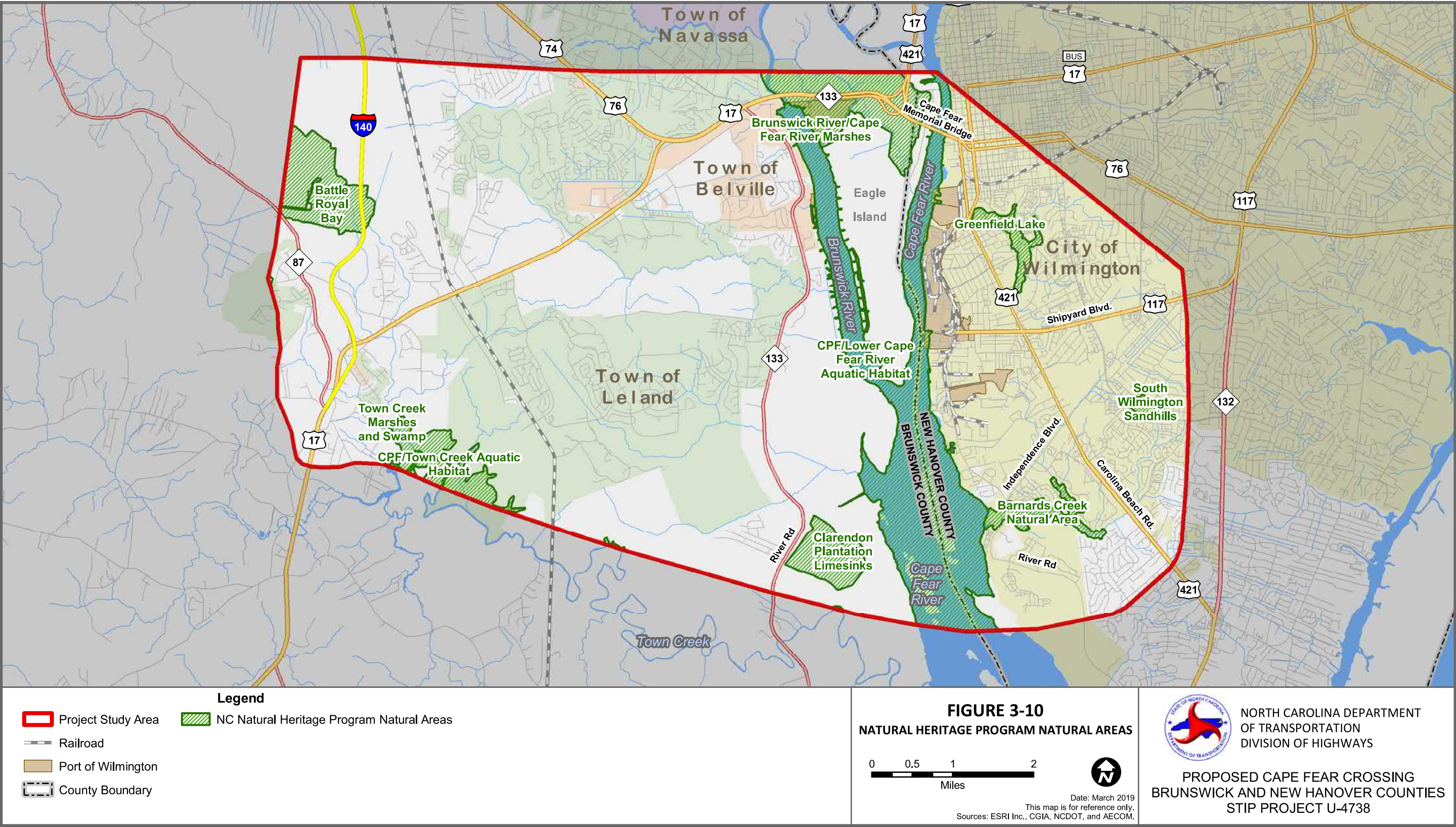


Figure 3-10: Natural Heritage Program Natural Areas

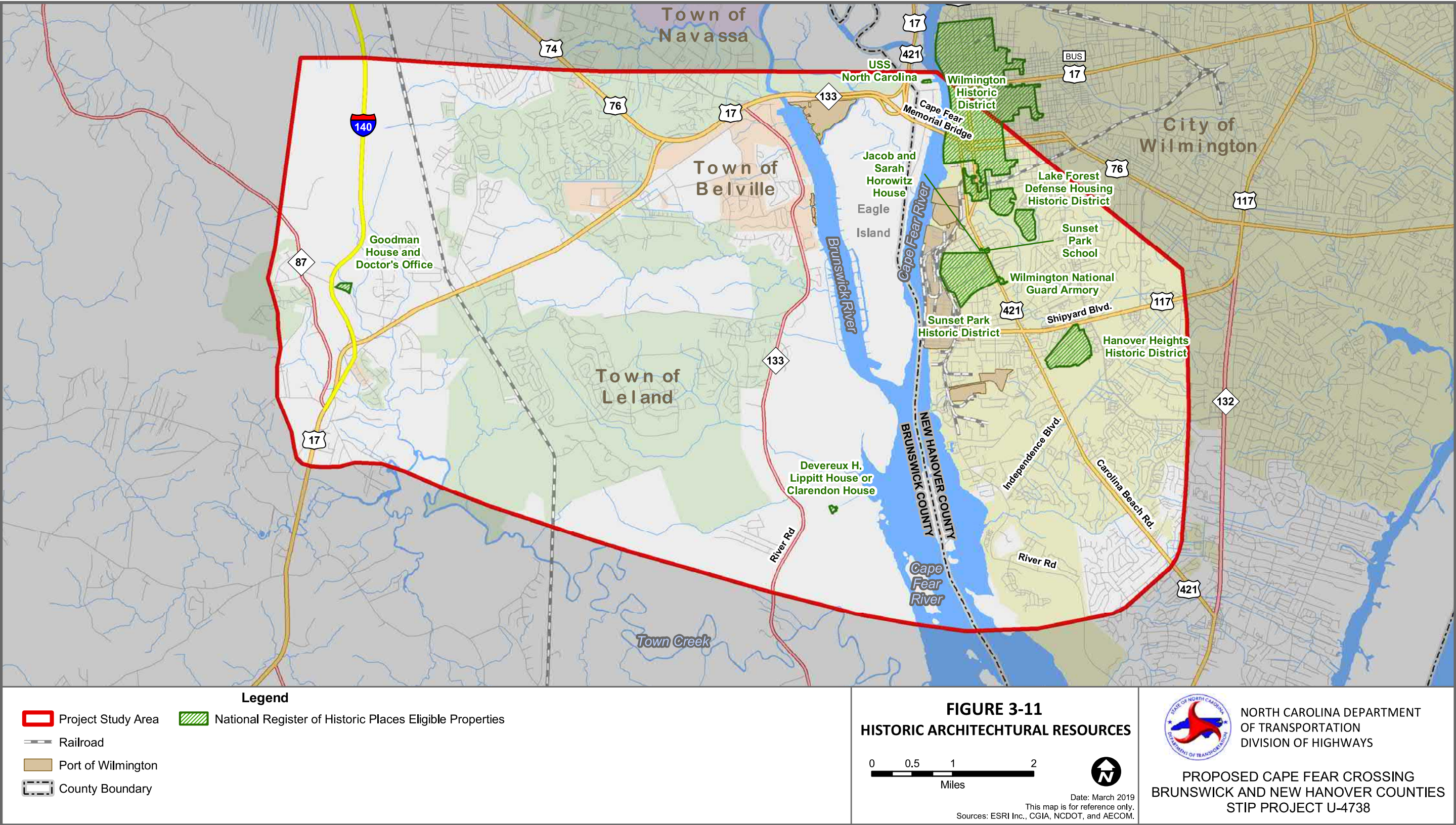


Figure 3-11: Historic Architectural Resources

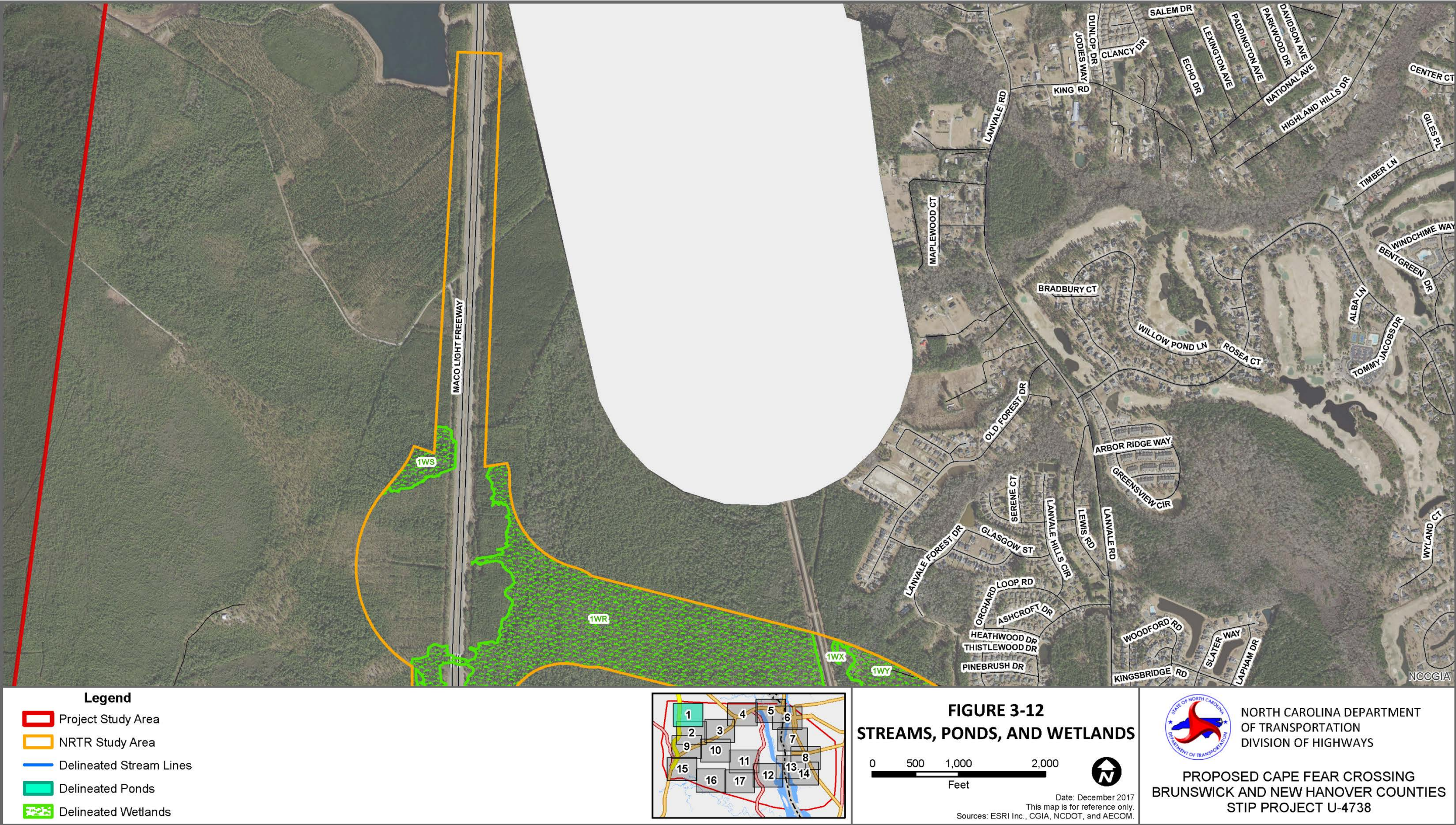


Figure 3-12: Streams, Ponds, and Wetlands

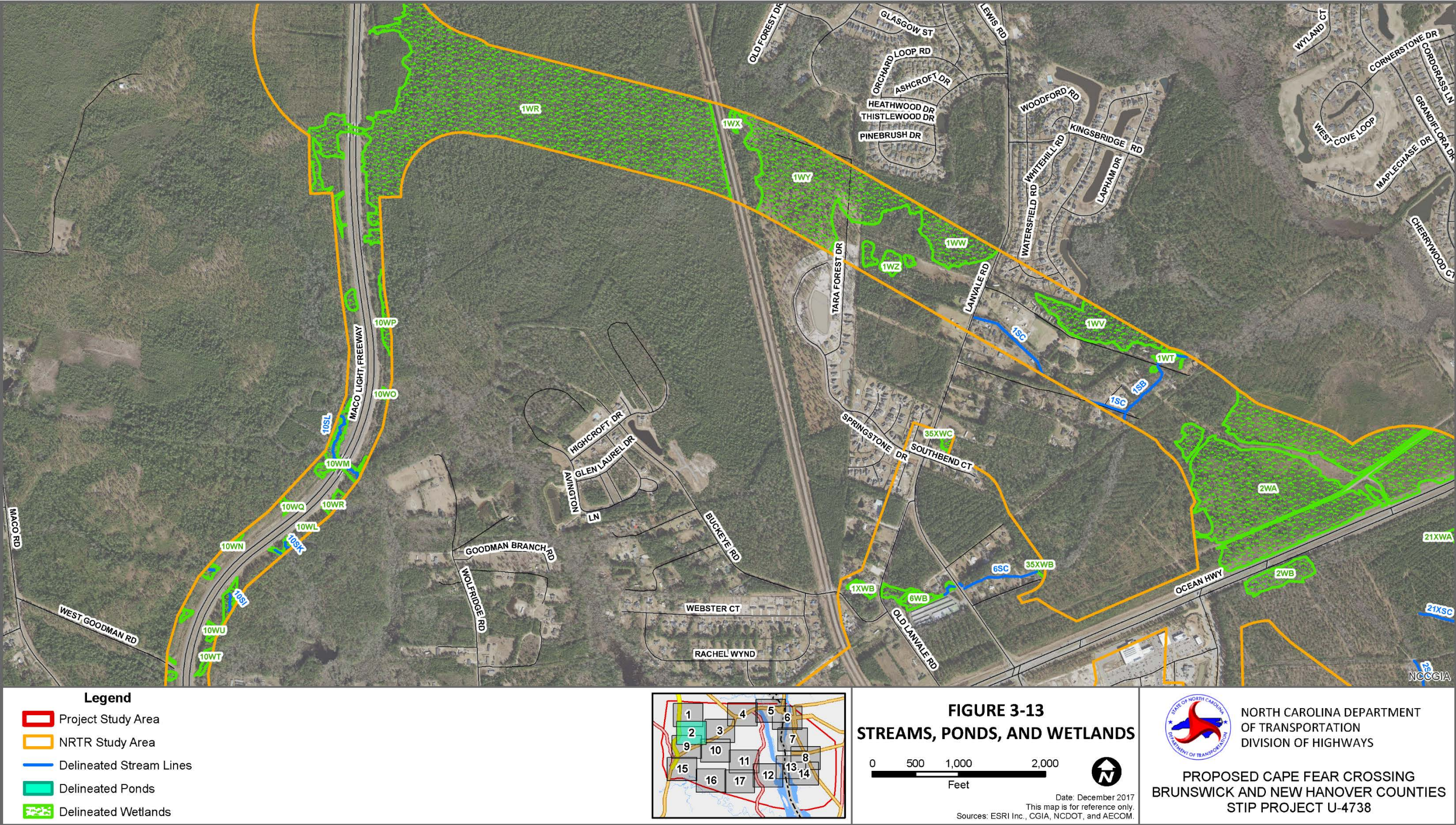


Figure 3-13: Streams, Ponds, and Wetlands

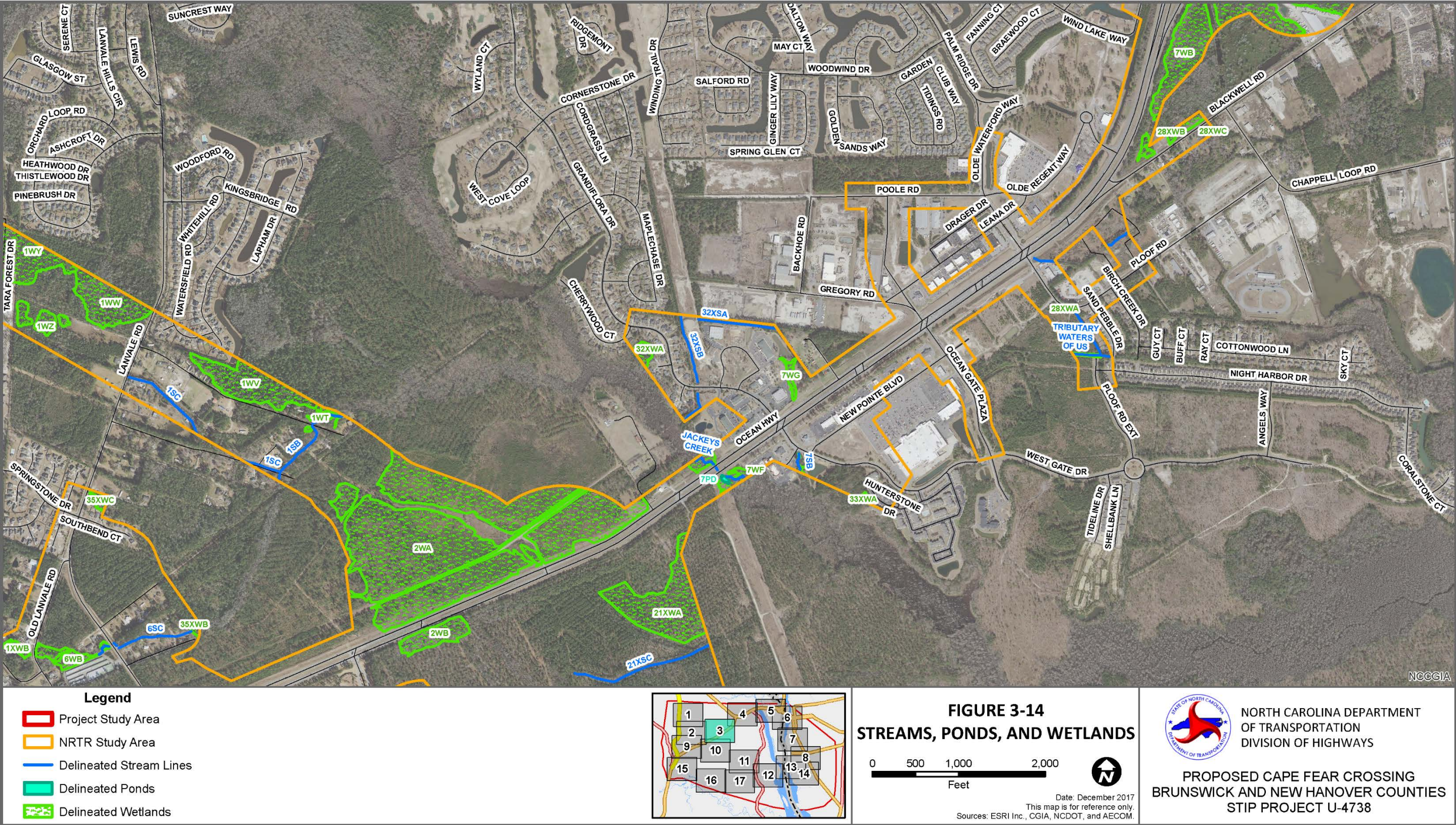


Figure 3-14: Streams, Ponds, and Wetlands

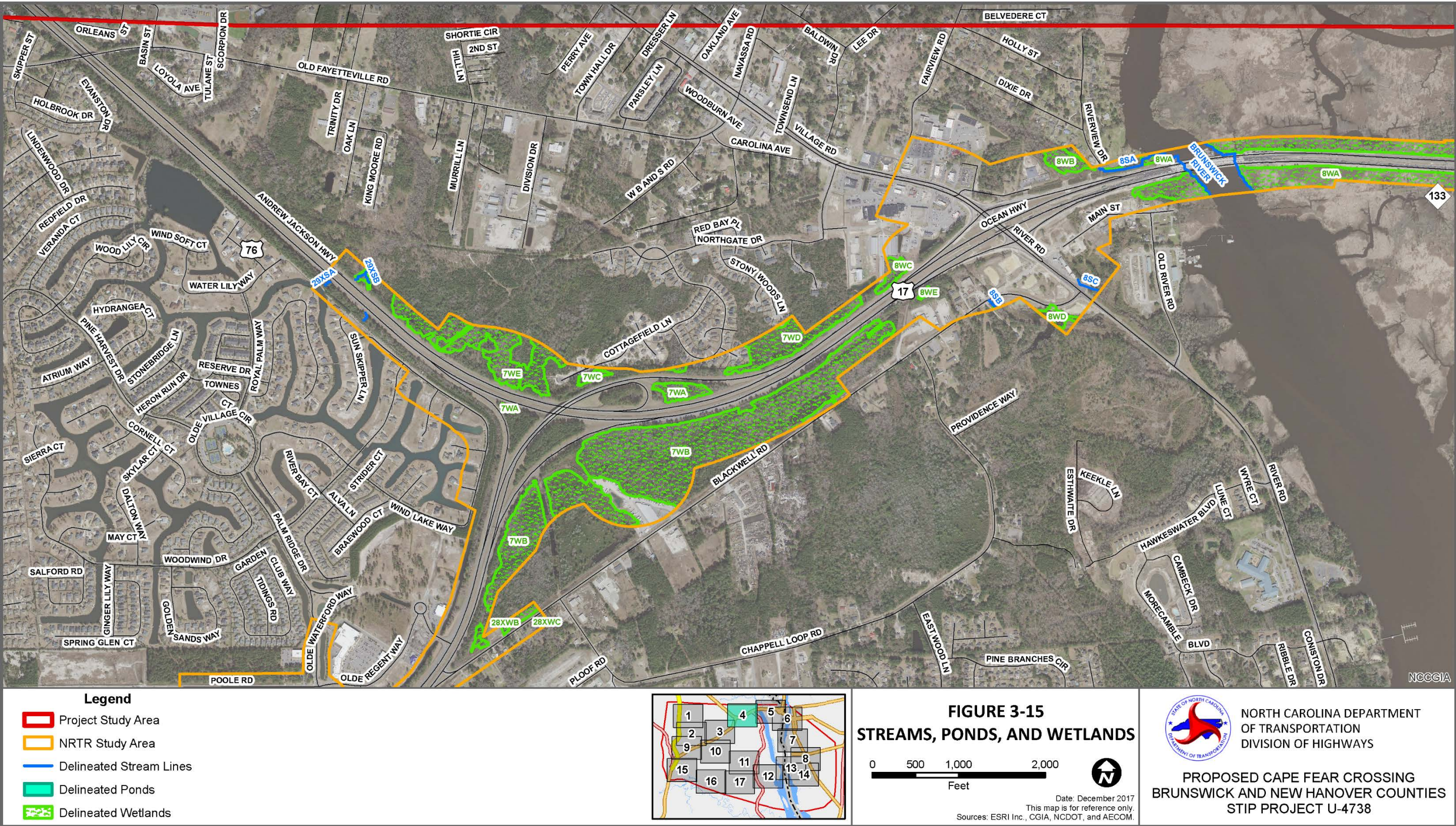


Figure 3-15: Streams, Ponds, and Wetlands

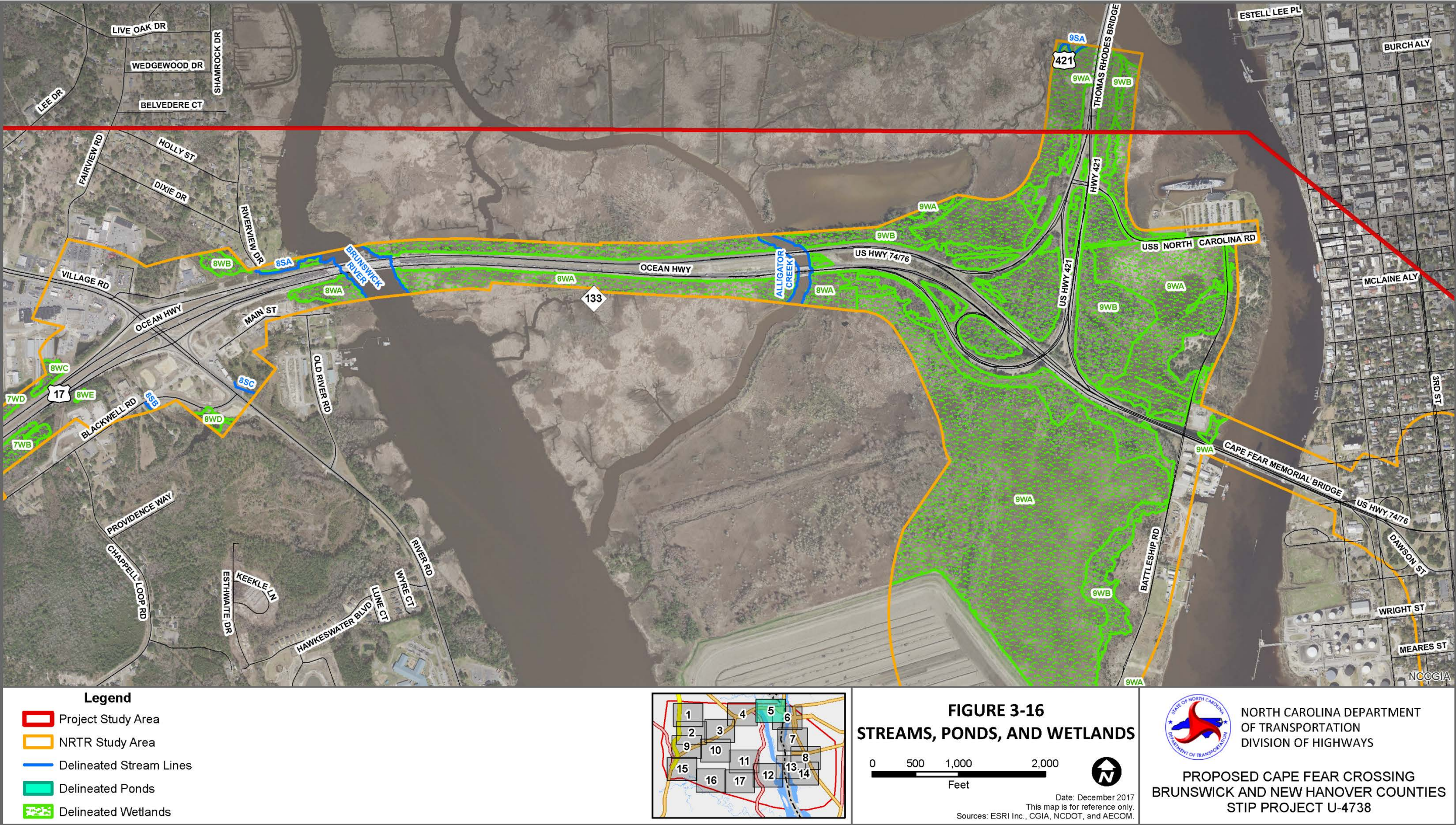


Figure 3-16: Streams, Ponds, and Wetlands



Figure 3-17: Streams, Ponds, and Wetlands

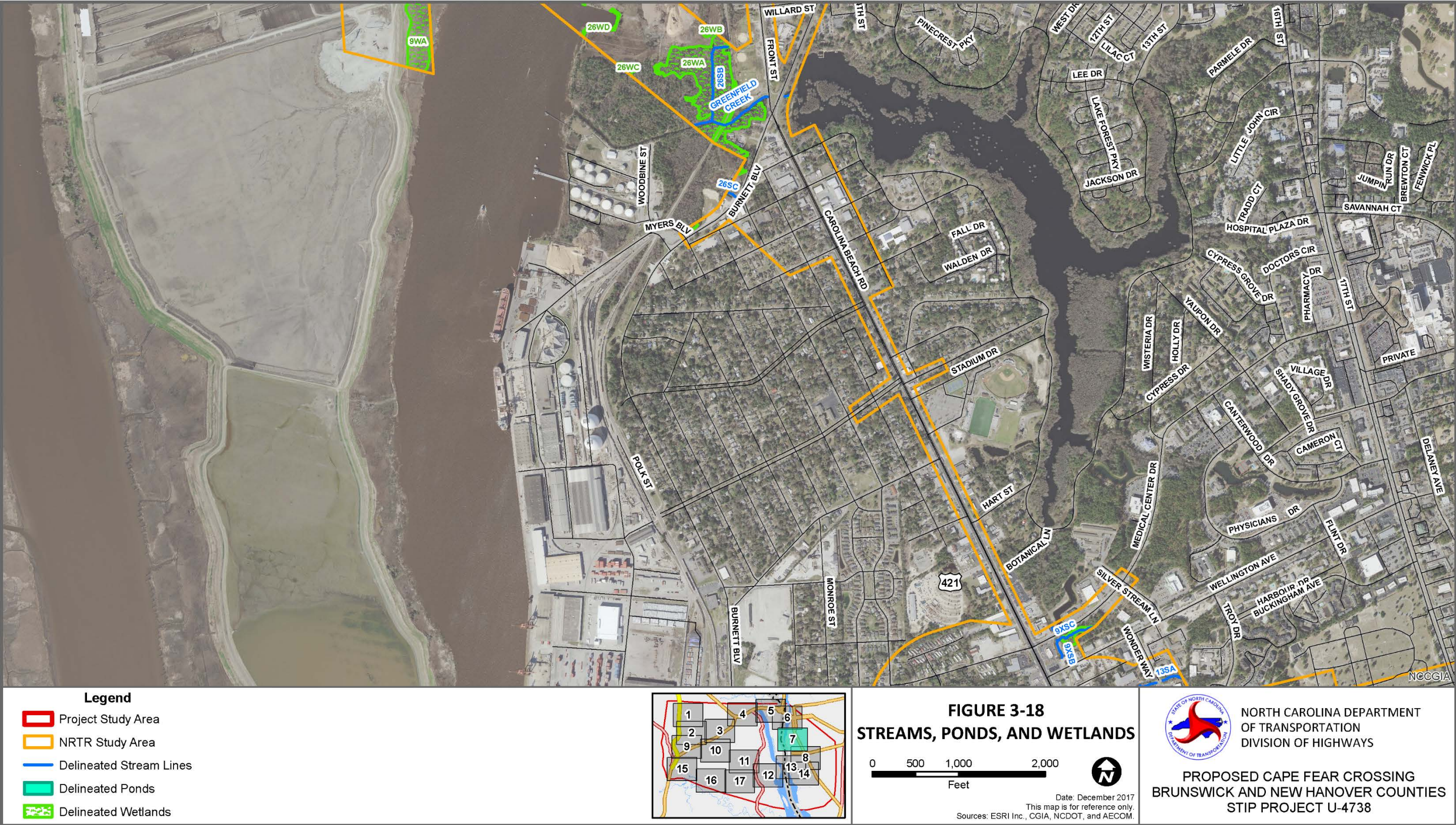


Figure 3-18: Streams, Ponds, and Wetlands

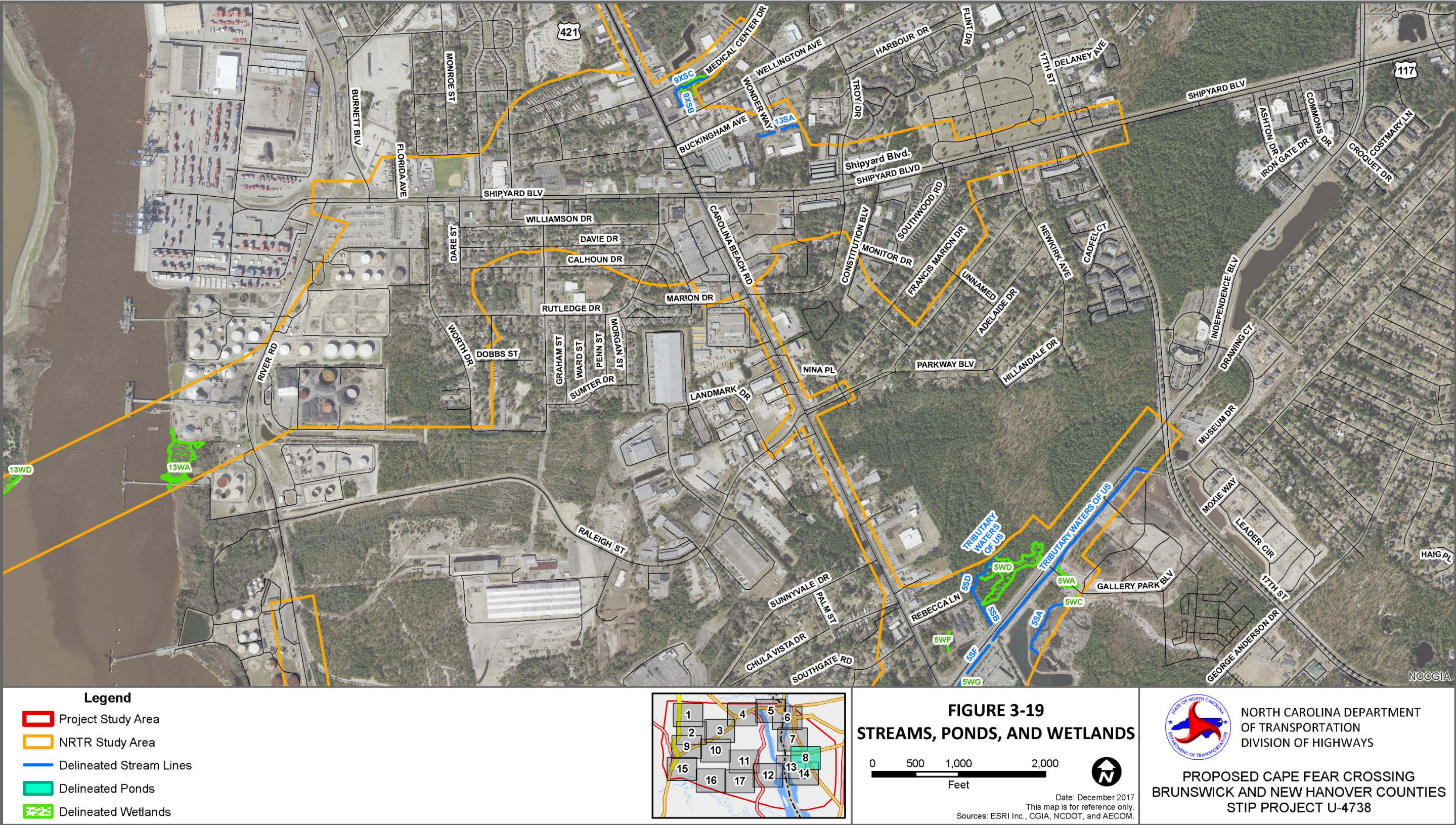


Figure 3-19: Streams, Ponds, and Wetlands

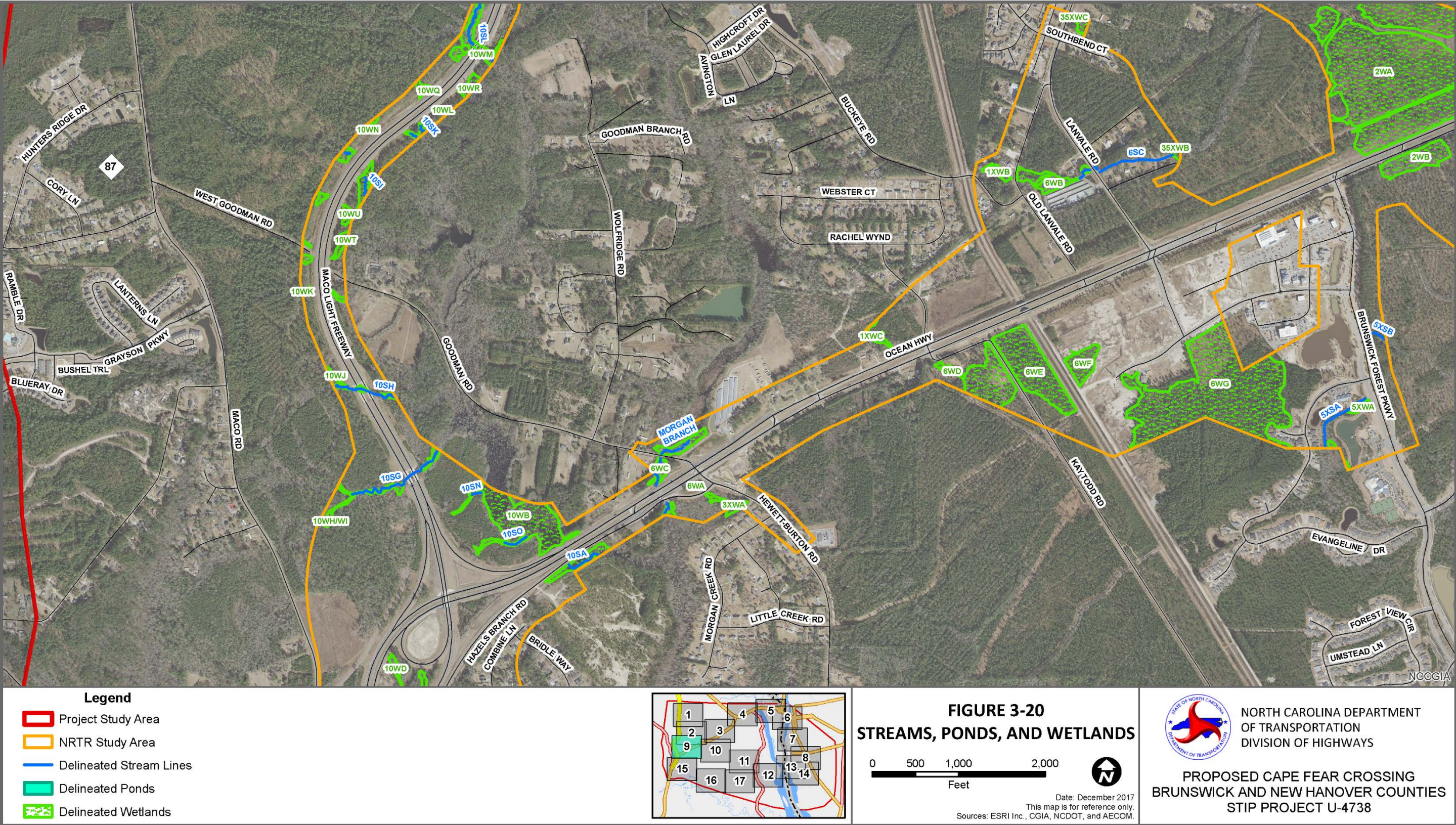


Figure 3-20: Streams, Ponds, and Wetlands

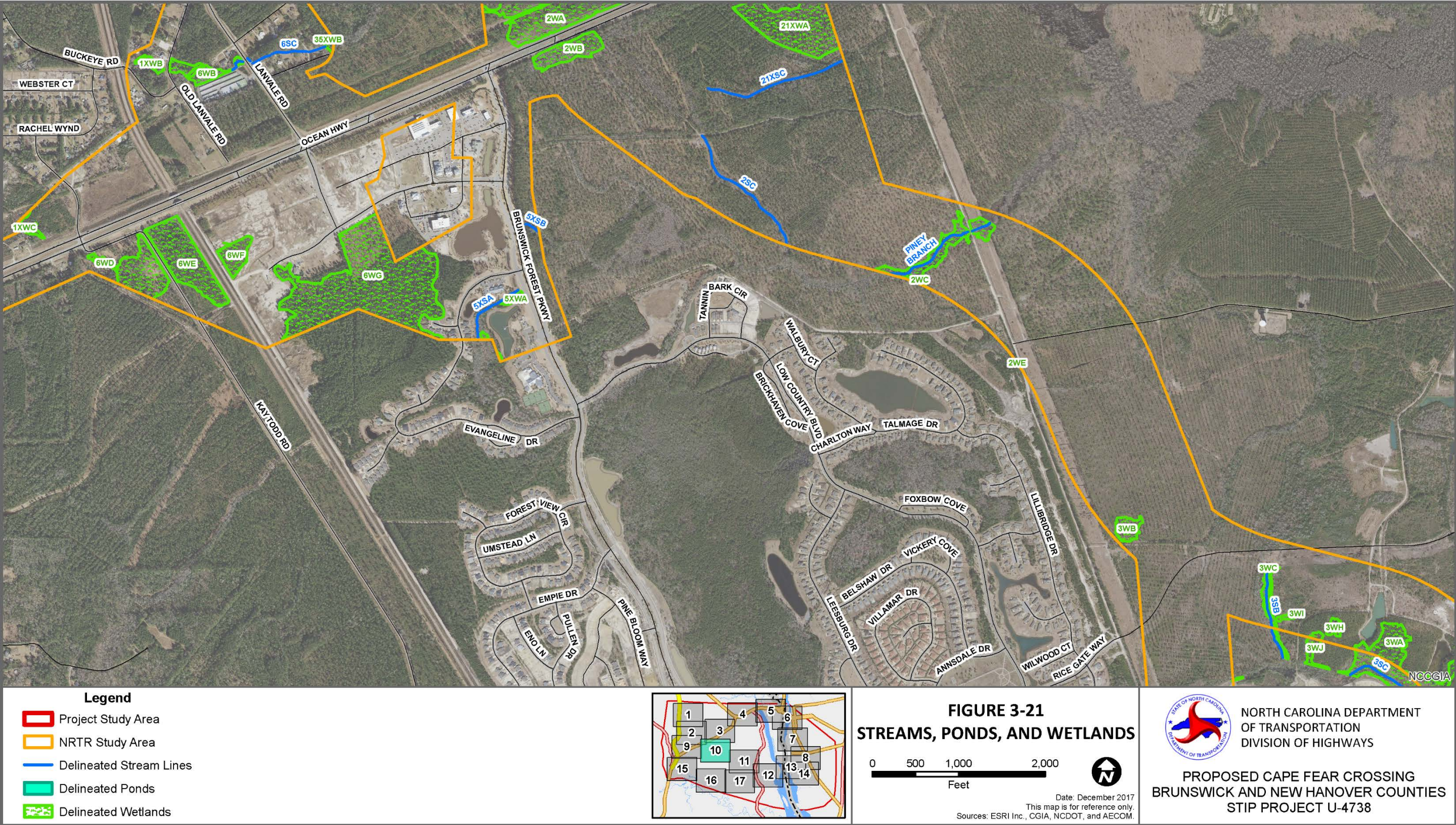


Figure 3-21: Streams, Ponds, and Wetlands

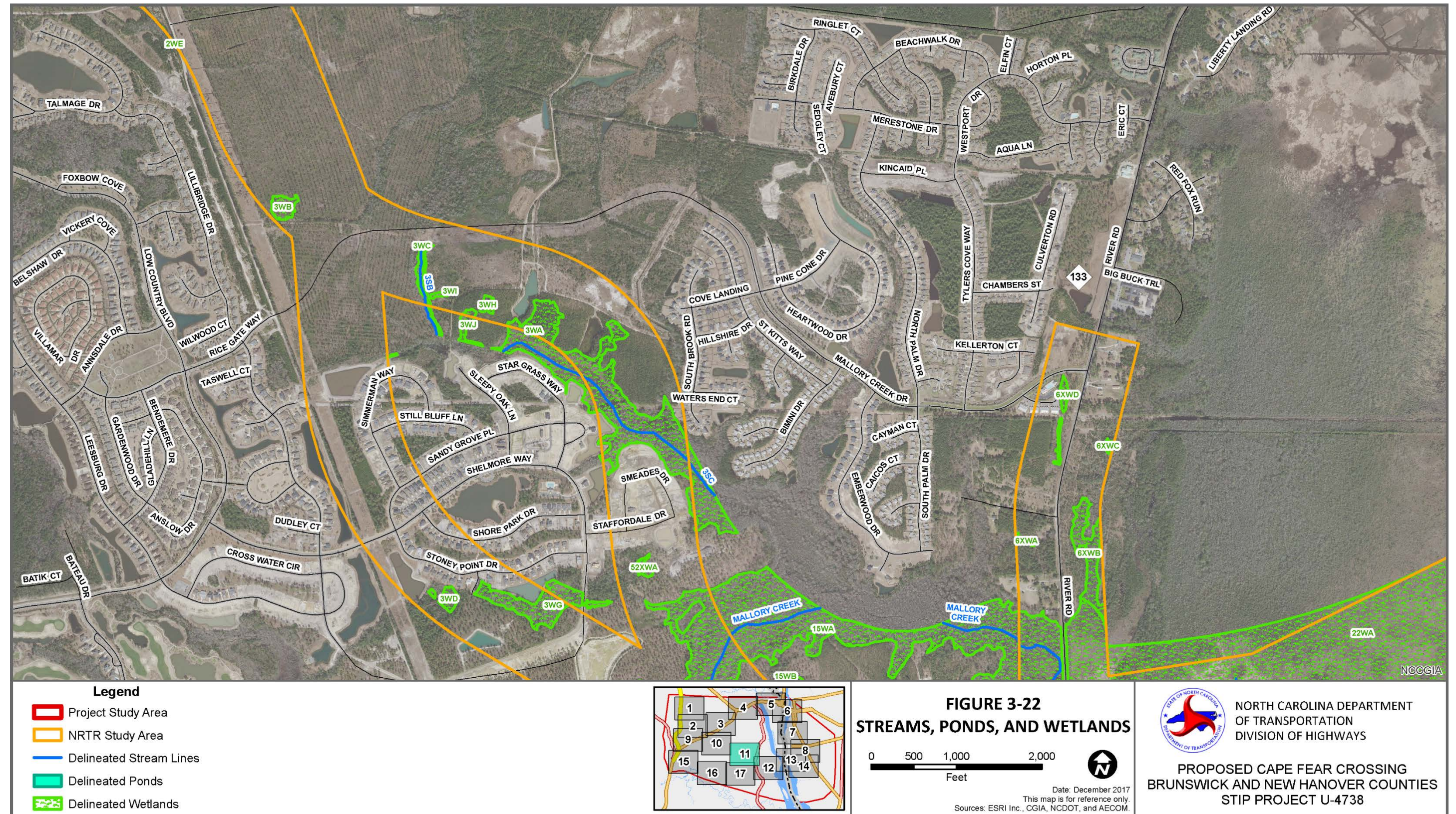


Figure 3-22: Streams, Ponds, and Wetlands

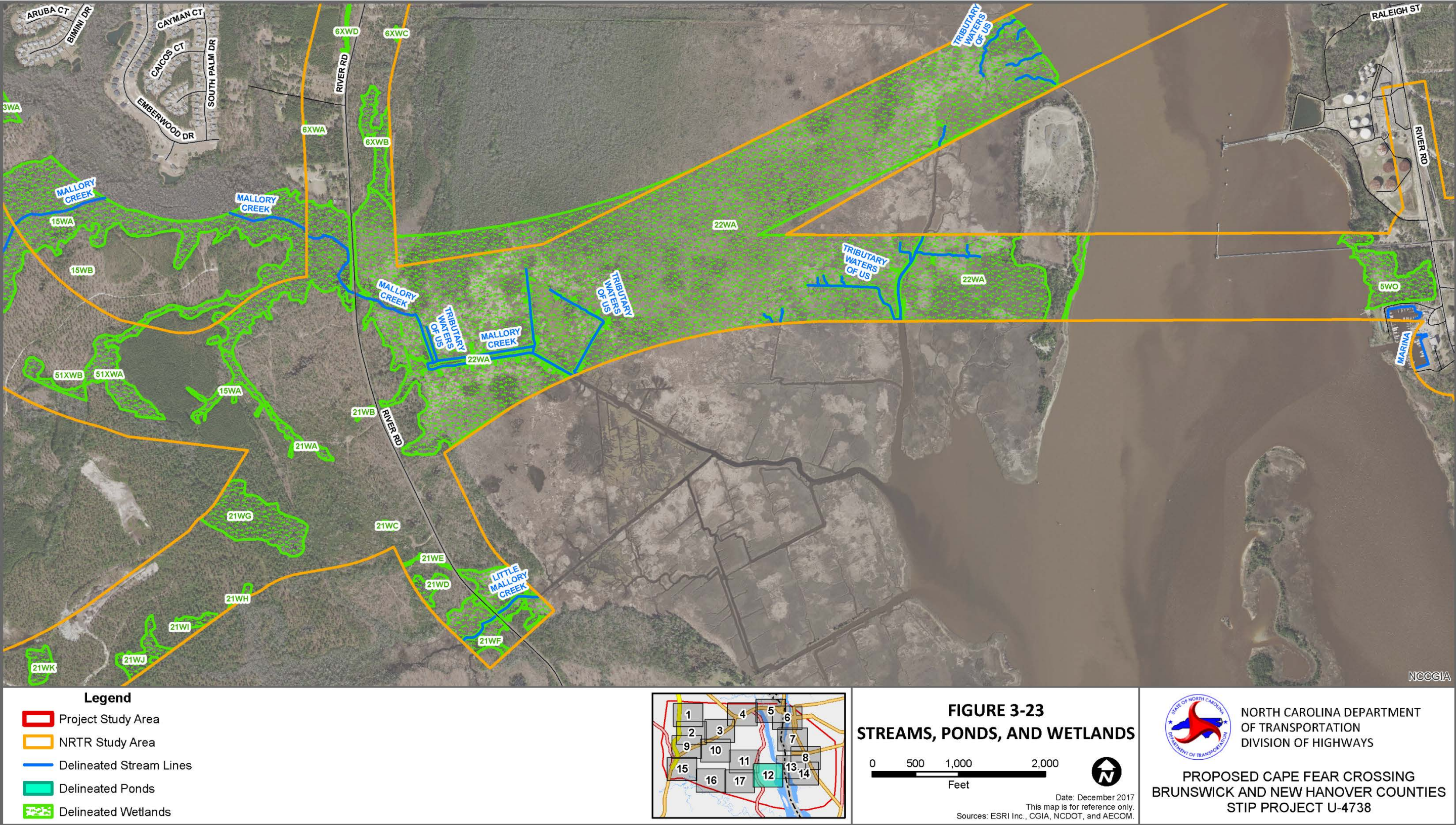


Figure 3-23: Streams, Ponds, and Wetlands

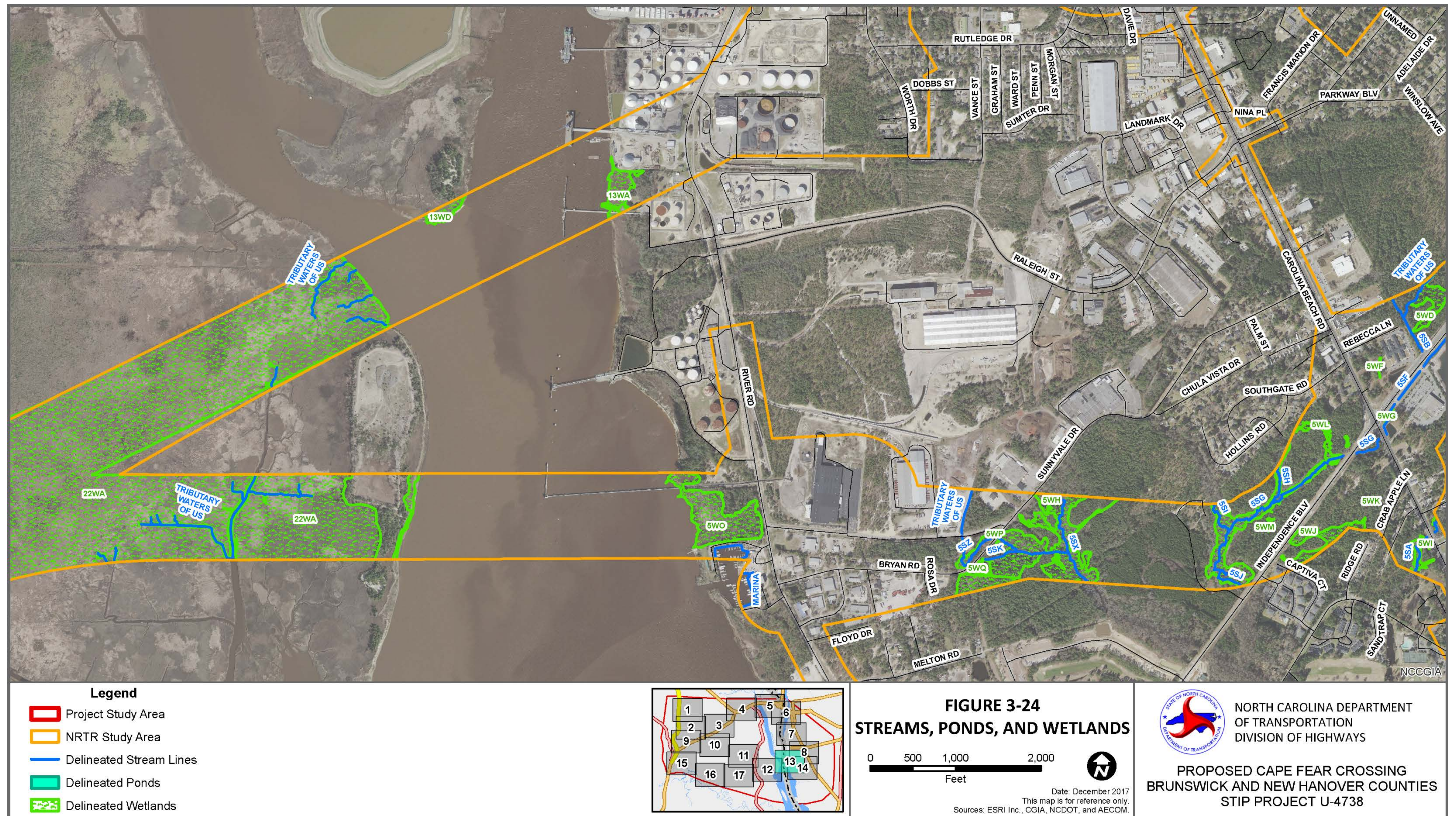


Figure 3-24: Streams, Ponds, and Wetlands

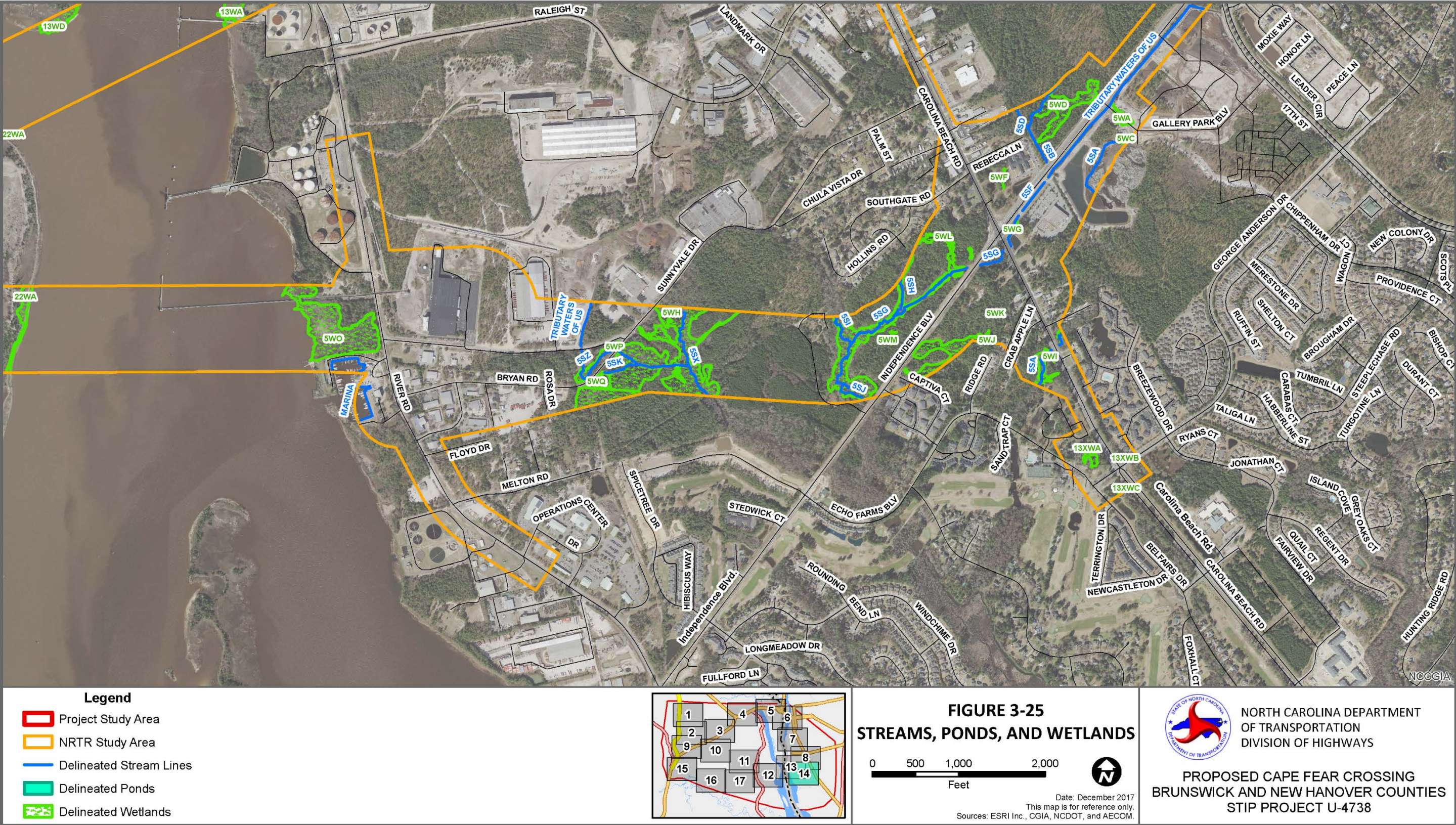


Figure 3-25: Streams, Ponds, and Wetlands

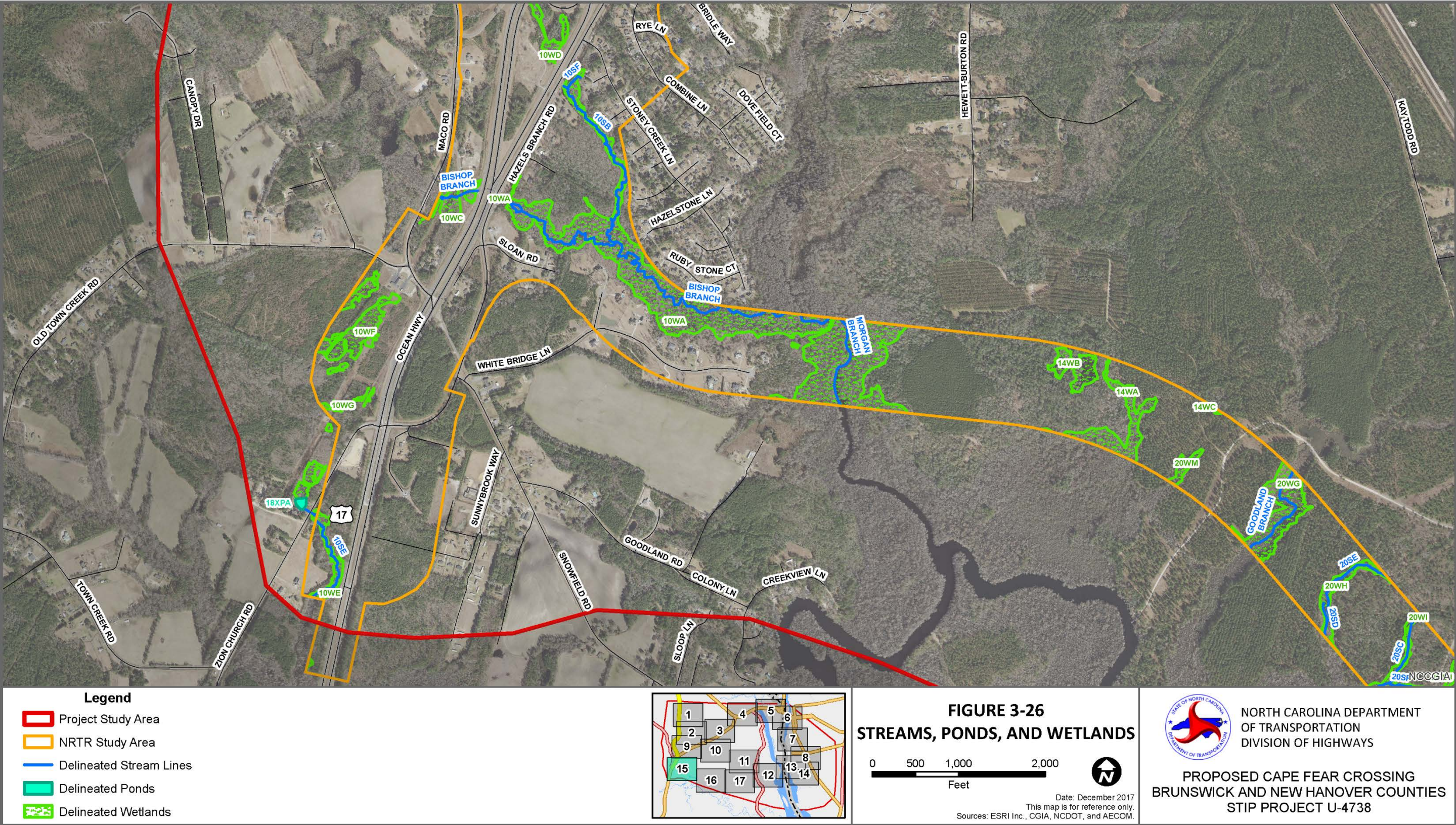
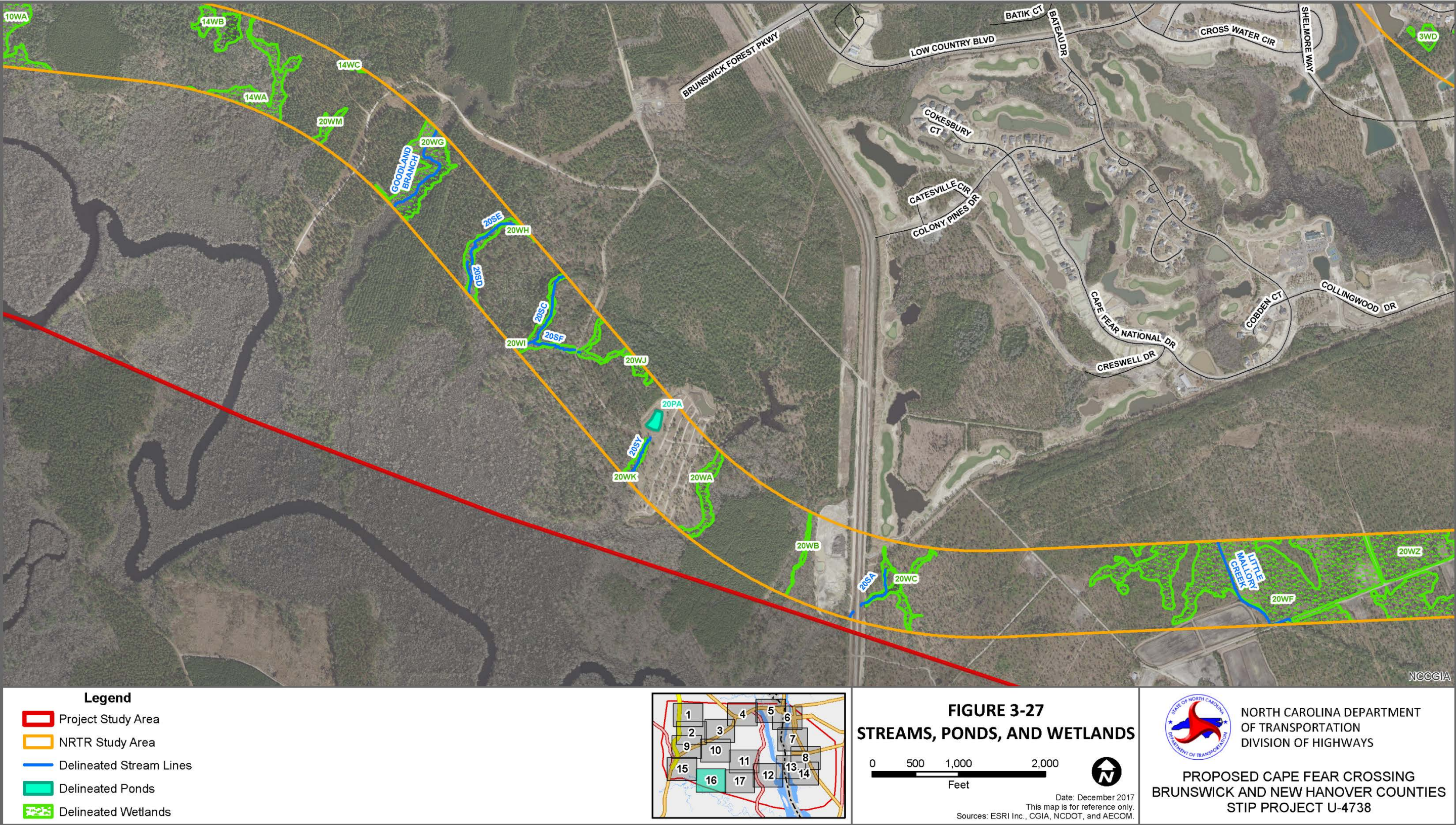


Figure 3-26: Streams, Ponds, and Wetlands



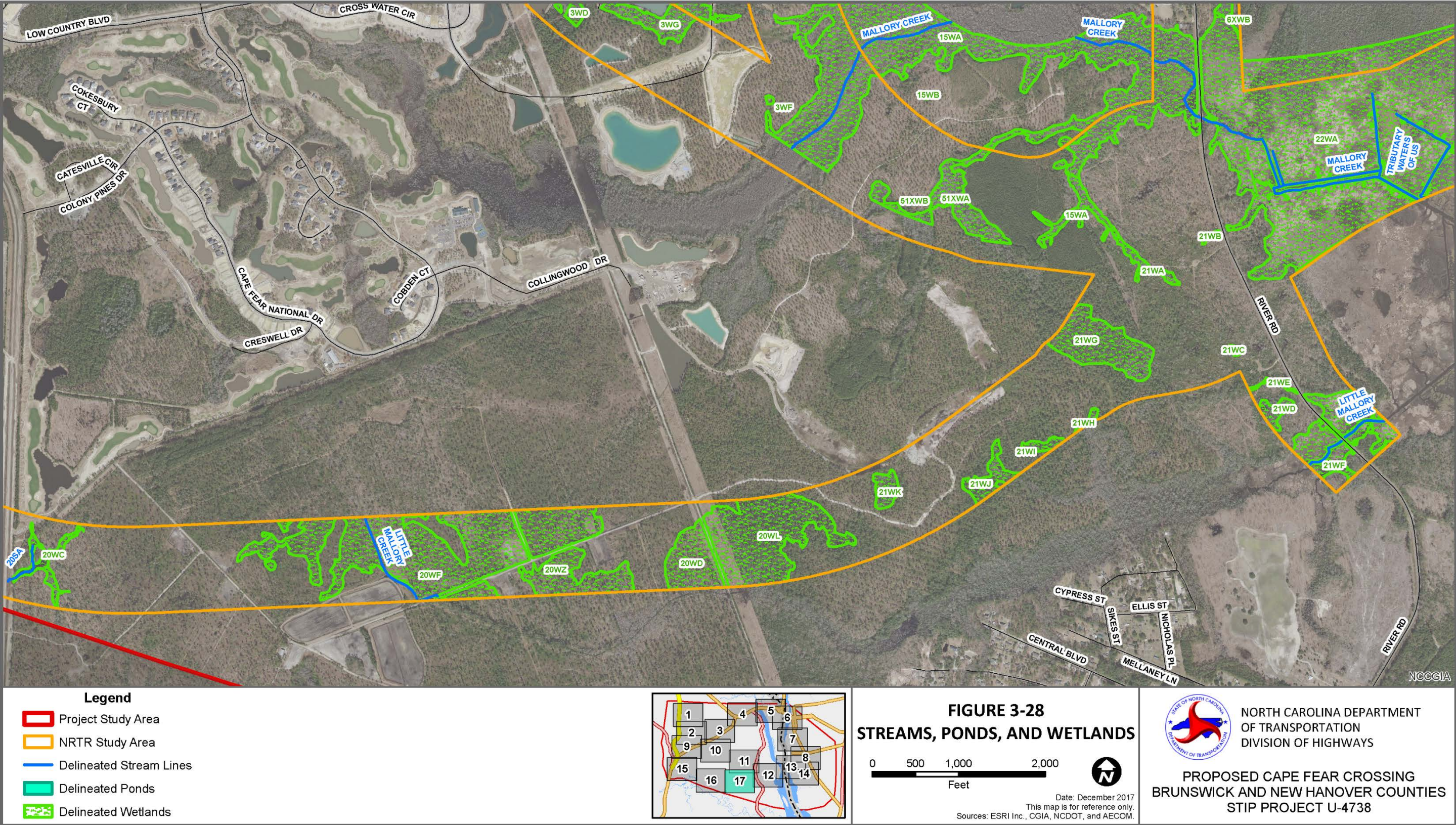


Figure 3-28: Streams, Ponds, and Wetlands

4 ENVIRONMENTAL CONSEQUENCES

The probable effects of implementing the proposed project on the human, physical, cultural, and natural environments within the project study area are described in this chapter. Impacts are based on the functional designs of the detailed study alternatives' right-of-way limits and construction slope stakes with a 40-foot buffer. Once a preferred alternative has been identified, design refinements will be used to further avoid impacts to the human, physical, cultural, and natural environments to the greatest extent practicable. Existing conditions for the human, physical, cultural, and natural environments are presented in Chapter 3.

4.1 Human Environment Impacts

4.1.1 Community Facilities and Services

4.1.1.1 Parks and Recreational Facilities

Alternative V-AW is expected to minimally impact Greenfield Lake Park, Legion Sports Complex, and Optimist Park. Alternatives B, N Avoidance, and T are expected to minimally impact E.P. Godwin Stadium. Direct impacts to the above resources may include the loss of open space and/or parking, changes in access, and increased traffic noise.

4.1.1.2 Churches

Impacts to churches within the right-of-way of the detailed study alternatives range from displacements to minimal right-of-way takes that do not impact the use of the church. Cape Fear Presbyterian Church, Faith Baptist Church, and Long Leaf Baptist Church could be minimally impacted along the front of the property line by Alternatives B, N Avoidance, and T. Alternative T would also impact St. James African Methodist Episcopal Church. Forward in Christ Freewill Holiness Church, Oak Grove Presbyterian Church, and River of Life Worship Center of Wilmington would be impacted by Alternatives Q and M Avoidance. Alternative M Avoidance would also impact St. James African Methodist Episcopal Zion Worship Center. Alternative V-AW would impact the Charismatic Episcopal Church, Greenfield Baptist Church, and New Life Christian Church.

4.1.1.3 Schools

Based on current designs, the Cape Fear Center for Inquiry would be impacted, requiring relocation, by Alternatives B and T. The school is located within the proposed right-of-way of the exit ramps at the proposed US 421 intersection in Wilmington.

4.1.1.4 Daycare Facilities, Cemeteries, Public Housing Units, Post Offices, and Hospitals

No daycare facilities, public housing units, post offices, or hospitals would be directly affected by the proposed project. Minimal impacts to the Greenlawn Memorial Park cemetery along Shipyard Boulevard would be incurred by Alternatives B, N Avoidance, and T.

4.1.1.5 Police, Fire, and Emergency Services

The proposed project would likely have an overall positive effect on police, fire, and other safety operations in the project study area due to increased mobility and reduced congestion on US 17, the Cape Fear Memorial Bridge, and US 421. The *Traffic Forecast Technical Memorandum* notes capacity would likely increase along US 17 for Alternative V-AW; however, volumes on the Cape Fear Memorial Bridge would decrease due to the additional crossing (NCDOT 2014).

Construction-related closures and detours could temporarily impact emergency response. Coordination with the Town of Belville, the Town of Leland, and the City of Wilmington police and fire departments would continue during construction to ensure minimal disruption of emergency services.

4.1.2 Relocation of Homes and Businesses

Relocation reports were prepared for the proposed project. All the detailed study alternatives would result in the relocation of homes and businesses. Total anticipated residential and business displacements for each detailed study alternative are shown in Table 4-1. The number of minority-owned or occupied homes and businesses is also shown in Table 4-1. Information regarding the NCDOT Relocation Assistance Program and relocation reports is included in Appendix B.

Table 4-1: Residential and Business Relocations

Relocations	Alternative					
	B	M Avoidance	N Avoidance	Q	T	V-AW
Residential	149 (62)	48 (9)	148 (33)	26 (5)	173 (15)	168 (24)
Business	117 (14)	43 (0)	86 (9)	45 (4)	88 (8)	98 (9)

Note: Numbers in parentheses indicate minority-owned or occupied homes and businesses. Business relocations include non-profits.

4.1.3 Community Impacts

Surrounding the existing interchange at I-140 and US 17, residential areas would be impacted by Alternatives M Avoidance, N Avoidance, Q, T, and V-AW. Some interchange configurations at the terminus of these alternatives would require the acquisition of residential areas. This would directly impact the community cohesion that exists in the area. Other impacts to this area would include noise, changes in access to US 17, and temporary construction impacts. Alternative B would impact residential areas along Lanvale Road, within Brunswick Forest, along NC 133, and south of Shipyard Boulevard. Impacts to these areas could include noise impacts, access changes, and in some instances, residential

relocations. Alternatives that terminate at (US 117) Shipyard Boulevard and Independence Boulevard would displace residences and impact several residential areas through increased noise and changes in access, some of which contain low-income and minority populations and potential Section 4(f) resources.

4.1.3.1 Changes in Access and Barrier Effects

The following sections outline potential changes in access to communities in the project study area.

Snowfield Road, Hazels Branch Road, and Sloan Road

Alternatives M Avoidance and N Avoidance would alter access to and from US 17 for communities along Snowfield Road, Hazels Branch Road, and Sloan Road. Under these alternatives, Hazels Branch Road is proposed to include a cul-de-sac at US 17 and access would be relocated less than one-half mile south of the existing tie-in to US 17. In addition, Sloan Road would be realigned farther south to connect into Hazels Branch Road. No barrier effects are anticipated, as access to US 17 would be maintained during its relocation.

US 421 (Carolina Beach Road)

Communities surrounding US 421 at South Carolina Avenue and North Carolina Avenue would incur access changes from Alternative V-AW. Direct access to US 421 from South Carolina Avenue would be removed and traffic would be diverted onto Adams Street, Washington Street, or Tennessee Avenue west of US 421. Also west of US 421, North Carolina Avenue traffic would be diverted onto Washington Street. Barrier effects are likely in this area, as the closing of streets would make it harder for local residents to move from place to place.

US 421/US 117

Residential areas surrounding the intersection at US 421 and US 117 would likely incur changes in access from Alternatives B, N Avoidance, and T. These impacts would include adding cul-de-sacs to several residential streets that connect to US 421 (i.e., Cape Fear Boulevard and Wellington Avenue), which would also create a barrier. Bell Street would also include a cul-de-sac at Adams Street. Direct access to Rutledge Drive from US 117 would likely be removed and a cul-de-sac would be added at Calhoun Drive. Furthermore, Holbrooke Avenue and Troy Drive would lose access to US 117. Holbrooke Avenue would still be accessible from US 421. The remaining alternatives would not impact accessibility to the surrounding communities within this area.

In addition, these areas are expected to experience direct takings and right-of-way encroachments that could negatively impact community cohesion. Barrier effects are possible, and local officials discussed this as being of particular concern for the areas surrounding US 421 (3rd Street) and US 76 (Wooster Street and Dawson Street), as well as for the communities near US 421 (Carolina Beach Road) and North Carolina Avenue and Tennessee Avenue.

4.1.4 Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, directs that “each federal agency make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health and environmental effects of its programs, policies, and activities on minority populations and low-income populations.” Disproportionately high and adverse effects on minority and low-income populations are defined as adverse effects that are:

- Predominantly borne by a minority population and/or low-income population or
- Would be suffered by a minority population and/or low-income population and are appreciably more severe or greater in magnitude than the adverse effects that would be suffered by the non-minority population and/or non-low-income population

Environmental justice principles will be applied through the project development process. These principles are as follows:

- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process
- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority or low-income populations
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority or low-income populations

Demographic data were collected and analyzed to determine whether there were concentrations of minority persons and low-income persons. Block Group level data were used to evaluate minority statistics. Poverty statistics were obtained at the Block Group level, which is the smallest unit available from the US Census Bureau. Detailed Block Group level demographic information is presented in Section 3.1.4.9.

Recurring impacts to potential Environmental Justice communities are possible. The community located near Goodman Road (Spring Hill), which is both a low-income and minority community, was recently impacted by the construction of I-140. Alternatives Q and T would involve further upgrades to US 17, which would have recurring temporary impacts from construction, as well as other indirect and cumulative effects from being located adjacent to major roadway construction, including increased development pressure.

Noise impacts to potential Environmental Justice communities are possible, but would need to be assessed upon completion of the noise analysis for this project. Other possible impacts to potential Environmental Justice communities could include visual impacts. Visual preferences can be difficult to discern without feedback from the community; therefore, potential visual impacts should be assessed following public outreach to the community.

Impacts to populations identified as minority and/or low-income are anticipated with this project. The severity of effects and potential of those effects to fall disproportionately on those communities will be determined through future public involvement. Any identified moderate to severe impacts may then be assessed to determine whether avoidance, minimization, or mitigation can be proposed. As discussed in Section 3.1.4.9, data from the 2011-2015 ACS indicate there are 19 blocks that exceed the threshold for minority populations and/or low-income populations. These are generally located north of US 17 and NC 133, downtown Wilmington, south of US 76 to Shipyard Boulevard, and surrounding the area to the south of the Port of Wilmington. Impacts to these communities would vary from loss of access to residential relocations. Changes in access to communities are discussed in Section 4.1.3.1.

4.1.5 Economic Effects

Diverting traffic from US 17 to alternatives that are on new locations, which include Alternatives B, M Avoidance, N Avoidance, Q, and T, could impact properties that are not destination businesses and receive their business from daily travelers, such as gas stations and restaurants. However, the impact could also be offset by the growing population and projected increase in the volume of traffic along the US 17 corridor.

The loss of land to right-of-way could impact the number of parking spaces, driveway access, and a business's ability to expand in the future. These impacts would vary from parcel to parcel and are dependent on the needs and plans of the individual business.

Many businesses within the project study area would see a positive economic benefit, as the proposed project would improve the local transportation system. As discussed in the *Capacity Analysis Report*, the 2040 no-build LOS on US 17 between West Gate Drive and US 74/76 ranges from LOS D to LOS F in the AM/PM peak hour. The 2040 no-build LOS on the Cape Fear Memorial Bridge ranges from LOS E to LOS F. The 2040 build projections for all the detailed study alternatives show several improvements in the LOS on US 17 between West Gate Drive and US 74/76 and on the Cape Fear Memorial Bridge (NCDOT 2018b). Reduced traffic congestion along US 17 and US 421 would improve the efficiency of transporting goods and services and extend the lifespan of US 17 and the Cape Fear Memorial Bridge.

4.2 Land Use and Transportation Planning

The compatibility of the project with local land use and transportation plans is assessed in this section. The purpose of and need for the proposed project does not require that the alternatives considered for the project meet the recommendations for any of the plans evaluated. Consistency with local land use plans is a factor when considering the scope and intensity of each alternative's impacts. Table 4-2 lists the compatibility of each alternative with local land use and transportation plans.

Table 4-2: Land Use and Transportation Plan Compatibility

Plan Name	Alternative					
	B	M Avoidance	N Avoidance	Q	T	V-AW
The Belville Vision 2020 Plan	●	●	●	●	●	⊙
Brunswick County CAMA Core Land Use Plan	●	●	●	○	○	○
Cape Fear: A Regional Framework for Our Future	●	●	●	●	●	●
Cape Fear Historic Byway Corridor Management Plan	●	●	●	●	●	⊙
Cape Fear Transportation 2040: A Metropolitan Transportation Plan	●	●	●	●	●	●
Carolina Beach Road Corridor Plan	○	○	○	○	○	○
Comprehensive Bicycle Plan for Leland, NC	○	●	●	○	○	○
Congestion Management Process/ 2016 Biennial Data Report	⊙	○	⊙	○	⊙	⊙
Connecting Northern Brunswick County	○	●	●	○	○	○
Create Wilmington Comprehensive Plan	○	○	○	○	○	○
Dawson & Wooster Corridor Plan	●	●	●	●	●	●
Gary Shell Cross-City Trail Master Plan	●	●	●	●	●	●
Hillcrest/Dry Pond Neighborhood Transformation Plan	●	●	●	●	●	○
Leland 2020 Master Plan	⊙	○	○	⊙	⊙	⊙
Leland CAMA Land Use Plan Update	⊙	○	○	⊙	⊙	⊙
Leland Gateway Infill Plan	●	●	●	●	●	●
Town of Leland Pedestrian Plan	○	●	●	○	○	⊙
Move. Play. Connect. The Wilmington/New Hanover County Comprehensive Greenway Plan	○	●	○	○	○	○
North Carolina Statewide Multimodal Freight Plan: Maritime Profile	●	●	●	●	●	●
Plan NHC: Charting the Course, New Hanover County Comprehensive Plan	●	●	●	●	●	●
River Road Small Area Plan	●	●	●	●	●	●
River to the Sea Bikeway Master Plan	●	●	●	●	●	●
Southside Small Area Plan	●	●	●	●	●	○

Table 4-2: Land Use and Transportation Plan Compatibility

Plan Name	Alternative					
	B	M Avoidance	N Avoidance	Q	T	V-AW
Strategic Plan of the North Carolina State Ports Authority	●	●	●	●	●	●
Transit Needs Study for the Wilmington Multi-Modal Transportation Center	●	●	●	●	●	●
US 17/NC 133 Collector Street Plan	○	●	●	○	○	●
Walk Wilmington: A Comprehensive Pedestrian Plan	◉	●	◉	◉	◉	◉
Wave Short Range Transit Plan	◉	●	◉	●	◉	◉
Wilmington MPO Comprehensive Transportation Plan	●	●	●	●	●	●
Wilmington-New Hanover County Joint Coastal Area Management Plan	●	○	●	○	●	○
Wilmington Rail Realignment and Right of Way Use Alternatives Feasibility Study	●	●	●	●	●	○
Wilmington Vision 2020: A Waterfront Downtown	●	●	●	●	●	○

● Consistent with Plan, ◉ Mostly Consistent with Plan, ◉ Partially Consistent with Plan, ○ Minimally Consistent with Plan, ○ Inconsistent with Plan

4.2.1 Land Use Plans

Over the last two decades the City of Wilmington has seen most available large tracts of land developed and is now concentrating planning efforts on infill development and redevelopment opportunities. The portion of Brunswick County within the project study area has similarly seen robust population growth, but on the west side of the Cape Fear River this population growth has resulted in a more drastic change in character from lower density largely rural development to large residential neighborhoods with the flourishing of select commercial corridors to support these residential uses. The region's boom in population growth prompted the development of a host of land use plans with several common themes.

Master plans and community comprehensive plans include *Plan NHC: Charting the Course*, *New Hanover County Comprehensive Plan*; *The Belville Vision 2020 Plan*; *Leland 2020 Master Plan*; *Create Wilmington Comprehensive Plan*; and *Cape Fear: A Regional Framework for Our Future*. These plans describe visions for a future where land use decisions help foster a sustainable form of economic development concentrated in key nodes. The desired economic development is described as community-based and pedestrian-scale with heavy emphasis on creating walkable mixed-use centers that are well-connected to residential areas with robust sidewalk networks and crosswalks across major roadways. The New Hanover County plans place a heavier emphasis on encouraging vertical and transit-oriented

development, whereas the Brunswick County plans emphasize the importance of establishing new mixed-use centers.

These plans acknowledge the delicacy in balancing increased traffic – which is understood to be critical in supporting the local economy – with the desired quality of life and community character. Without exception, these plans address these competing urban forms through identifying nodes where commercial/mixed-use development should be concentrated. Several of these plans contain sketches illustrating what the future of these nodes would look like. Wilmington and Leland developed several small area plans (to include *Wilmington Vision 2020: A Waterfront Downtown*, *Southside Small Area Plan*, and *Leland Gateway Infill Plan*) to further investigate the opportunities and needs associated with some of these nodes at a more localized scale. In all of these examples, the success of these nodes relies on increasing multi-modality and interconnectivity of the transportation network.

The location of some of the identified future nodes of commerce and desired walkability conflicts with portions of the detailed study alternatives. *Wilmington Vision 2020: A Waterfront Downtown* and the *Southside Small Area Plan* discuss the importance of downtown Wilmington as a central walkable and mixed-use node. They further describe the importance of strengthening the connection of the Greenfield Lake Park to downtown Wilmington utilizing 5th Street, 3rd Street, and Front Street. At this location, Alternative V-AW proposes to add a cul-de-sac on Front Street at the intersection of Burnett Boulevard and US 421. Access to Greenfield Lake Park would still be available from 5th Street and 3rd Street; however, access from US 421 to West Lake Shore Drive, which provides access to the park and parking, would be removed and a cul-de-sac would be constructed. These plans and the *Hillcrest/Dry Pond Neighborhood Transformation Plan* also describe the importance of Greenfield Lake Park in serving the adjacent community.

In addition to the downtown nodes central to community commerce and civic life, these plans specify other future nodes of commerce, some of which would be impacted by several of the detailed study alternatives. *The Belville Vision 2020 Plan* and the *Leland 2020 Master Plan* identify the existing nodes of commerce that have developed along US 17 in Leland, Belville, and portions of unincorporated Brunswick County within the project study area. The plans also envision further development of this corridor as a commercial center with several adjacent mixed-use developments lining US 17. Both plans highlight the importance of incorporating pedestrian-friendly facilities. Alternative V-AW would not restrict access to the existing developed areas along US 17 in Brunswick County; therefore, future development of this area would still be available.

The *Create Wilmington Comprehensive Plan* also identifies several nodes along Carolina Beach Road that would be impacted by all detailed study alternatives. Along Carolina Beach Road (US 421), Shipyard Boulevard, and Independence Boulevard, several mixed-use centers and transit centers are identified, indicating the vision of the area is to become transit and pedestrian oriented. The detailed study alternatives would not preclude planned pedestrian facilities from being constructed and would replace any facilities, such as sidewalks, that would be removed during construction. The plan also identifies the area along US 421 and Shipyard Boulevard as a suburban commercial retrofit area of opportunity and

identifies access management techniques, such as the reduction of driveways, as a goal. This could be accomplished by Alternatives B, N Avoidance, and T as some driveway access would be removed; however, some local streets may still have access to US 421. However, the plan identifies the area south of the intersection of Burnett Boulevard, Front Street, and Carolina Beach Road as an area for inner-city revitalization, which would include higher densities of mixed-use development, additional pedestrian movements, and a more downtown urban identification of the area. Alternative V-AW is not entirely compatible with this concept, as the alignment would introduce a new facility to the surrounding area and would impact existing residential areas along Washington Street and Adams Street.

4.2.2 Transportation Plans

The same recent rapid growth that encouraged communities to develop comprehensive plans and master plans also encouraged them to look more specifically at the transportation planning required to accommodate growth and desirable types of development.

Most of this transportation planning work was led by or involved the WMPO. The WMPO's involvement in the Cape Fear Crossing is reflected in the development of the transportation plans – the more recent plans such as *Cape Fear Transportation 2040* and the *Wilmington MPO Comprehensive Transportation Plan* directly reference and are consistent with the detailed study alternatives. The WMPO also maintains a congestion management process and their *Congestion Management Process/2016 Biennial Data Report* identifies several strategies to reduce congestion in the region in general and on Carolina Beach Road and Shipyard Boulevard in particular through improving access management, transit access, and walkability/bike ability of the corridors. The detailed study alternatives would remove smaller driveway access along Shipyard Boulevard, Carolina Beach Road, and Independence Boulevard and would not preclude planned pedestrian facilities from being constructed and would replace any facilities that would be removed during construction.

Brunswick County plans such as the *Leland 2020 Master Plan* and the *US 17/NC 133 Collector Street Plan* envision the development of a future interconnected network of walkable neighborhoods between NC 133 and US 17. The detailed study alternatives would not preclude creating walkable neighborhoods between NC 133 and US 17; however, pedestrian connectivity across US 17 does not currently exist. *Connecting Northern Brunswick County* also identifies the need for more interconnectivity in this area of Brunswick County; but it envisions a more limited network of collector streets many of which could be compatible with these alignments. The *Connecting Northern Brunswick County* plan identifies that a more interconnected transportation network would not only serve the community from a quality of life and economic development perspective, but it would address long-standing concerns with regards to adequate evacuation routes in Brunswick County. *The Belville Vision 2020 Plan*, *Leland 2020 Master Plan*, and *Cape Fear: A Regional Framework for Our Future* all identify the improvement of evacuation routes as a critical need for Brunswick County. All the detailed study alternatives would help to address this need by providing additional capacity and more efficient traffic routing for use during evacuations.

Other transportation plans from the City of Wilmington address more localized visions for corridors and small areas. The *River Road Small Area Plan* identifies the impact that the Cape Fear River Crossing

would have on the future development of River Road and accommodates the project in its vision and plans by making recommendations for transportation and land use changes that are consistent with the Cape Fear Crossing. The *Carolina Beach Road Corridor Plan* recommends the installation of access management the entire length of Carolina Beach Road, which is largely consistent with all alternatives, which also plan for access management along Carolina Beach Road. Finally, similar to the visions in *Wilmington Vision 2020: A Waterfront Downtown* and the *Southside Small Area Plan*, the *Cape Fear Historic Byway Corridor Management Plan* identifies the importance of Greenfield Lake Park and the connection this park and the intersection of US 421/Front Street and 3rd Street have to downtown Wilmington. At this location, Alternative V-AW proposes to add a cul-de-sac on Front Street at the intersection of Burnett Boulevard and US 421. Access to Greenfield Lake Park would still be available from 5th Street and 3rd Street; however, access from US 421 to West Lake Shore Drive, which provides access to the park and parking, would be removed and a cul-de-sac would be constructed.

Communities in the project study area have also adopted mode-specific transportation plans. Transit plans, to include the *Transit Needs Study for the Wilmington Multi-Modal Transportation Center*, envision increased traffic in the heart of downtown north of the detailed study alternatives. The *Wave Short Range Transit Plan* identifies US 421/Carolina Beach Road and US 117/Shipyards Boulevard as having a high propensity for transit ridership and currently service several popular established fixed routes. These fixed routes would still be accessible by the detailed study alternatives.

Bicycle and pedestrian plans further the visions for more walkable multimodal communities relayed in *Plan NHC: Charting the Course*, *New Hanover County Comprehensive Plan*; *The Belville Vision 2020 Plan*; *Leland 2020 Master Plan*; *Create Wilmington Comprehensive Plan*; and *Cape Fear: A Regional Framework for Our Future*. The *Town of Leland Pedestrian Plan* identifies future priorities for sidewalks, multi-use paths, and crosswalks within the Town of Leland. This pedestrian plan identifies the need for increased walkability and interconnectivity in the neighborhoods north and south of US 17, which could be impacted by Alternatives B, Q, and T as these alternatives do not include pedestrian facilities across US 17; however, planned pedestrian facilities would not be precluded by the project. The *Comprehensive Bicycle Plan for Leland, NC* identifies recommendations for bicycle routes, crosswalks, and multi-use paths. Both of these plans include crosswalks along US 17. The detailed study alternatives would not preclude these facilities from being constructed. Both of these plans also include multi-use paths along the same general alignments of Alternatives B, Q, and T.

Wilmington and New Hanover County also adopted several bicycle and pedestrian plans to include *Walk Wilmington: A Comprehensive Pedestrian Plan* and *Move. Play. Connect. The Wilmington/New Hanover County Comprehensive Greenway Plan*. These plans indicate that there is a history of heavy pedestrian fatalities at Carolina Beach Road and Shipyards Boulevard, and provide recommendations for pedestrian and bicycle improvements along the Carolina Beach Road and Shipyards Boulevard corridors. The detailed study alternatives would not preclude planned pedestrian facilities from being constructed and would replace any facilities, such as sidewalks, that would be removed during construction. These recommendations would be impacted by Alternatives B, N Avoidance, T, and V-AW. The *Move. Play. Connect. The Wilmington/New Hanover County Comprehensive Greenway Plan* also indicates that the

future East Coast Greenway multi-state trail is routed down Independence Boulevard. Alternatives M Avoidance and Q would not preclude planned future pedestrian facilities from being constructed and would replace any facilities, such as sidewalks, that would be removed during construction.

Recent mode-specific transportation plans also provide a vision for the future of freight in the region. The NCSA's *North Carolina Statewide Multimodal Freight Plan: Maritime Profile* and *Strategic Plan of the North Carolina State Ports Authority* are generally supportive of landside improvements and particularly supportive of the completion of design and construction of the fourth river crossing. The proposed project is consistent with this goal by constructing a third river crossing. The *Strategic Plan of the North Carolina State Ports Authority* indicates that landside costs account for about 50 percent of freight expenses, and thus supports improvements to all congested truck routes in North Carolina with a recommendation that investments be targeted along the US 74/76 corridor. The City of Wilmington adopted the *Wilmington Rail Realignment and Right of Way Use Alternatives Feasibility Study* in 2017, which analyzed the potential to re-route rail freight to the port north of the detailed study alternatives.

4.2.3 Coastal Management Plans

Plan NHC: Charting the Course, New Hanover County Comprehensive Plan; The Belville Vision 2020 Plan; Leland 2020 Master Plan; Create Wilmington Comprehensive Plan; and Cape Fear: A Regional Framework for Our Future all indicate that protecting the natural environment was a core goal of the community. These plans identify the impact of growth and development on the natural environment and on evacuation routes as a concern.

Brunswick County and Leland developed CAMA plans to address issues regarding development in coastal areas. The *Brunswick County CAMA Core Land Use Plan* identifies the rapid population and development growth of Brunswick County as being critical in fostering economic development goals, but that these goals need to be balanced by strengthening evacuation plans and the interconnectivity of the roadway network. The Town of Leland developed its own CAMA Plan; the *Leland CAMA Land Use Plan* notes growth, traffic, water quality, and supply as the largest concerns for the town. Both the *Leland CAMA Land Use Plan* and the *Leland 2020 Master Plan* identified wetland and conservation areas that would be impacted by construction on new location from Alternatives M Avoidance and N Avoidance in particular, but also by Alternatives B, Q, and T.

The *Wilmington – New Hanover County Joint Coastal Area Management Plan* similarly identifies the need for a balance between encouraging economic development and adequate infrastructure with protection of natural amenities. This plan supports efforts to ensure necessary infrastructure to include utilities and transportation are available for commercial and industrial development in areas identified as suitable on the Land Classification Map and consistent with the Future Land Use Plan. It also specifically supports the WMPO in encouraging state and federal authorities to provide interstate connections to areas south and west of the urban area. This plan also identifies conservation areas at Independence Boulevard and River Road and at Front Street and 3rd Street, which would be impacted by Alternatives M Avoidance, Q, and V-AW with new development.

4.3 Physical Environment Impacts

4.3.1 Traffic Noise

In accordance with Title 23 Code of Federal Regulations Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise (Title 23 CFR 772) and the North Carolina Department of Transportation Traffic Noise Policy, each Type I highway project must be analyzed for predicted traffic noise impacts. In general, Type I projects are proposed State or Federal highway projects for construction of a highway or interchange on new location, improvements of an existing highway which substantially change the horizontal or vertical alignment or add new through lanes, or projects that involve new construction or substantial alteration of transportation facilities such as weigh stations, rest stops, ride-share lots or toll plazas.

Traffic noise impacts are determined through implementing the current Traffic Noise Model (TNM®) approved by the Federal Highway Administration (FHWA) and following procedures detailed in Title 23 CFR 772, the NCDOT Traffic Noise Policy and the NCDOT Traffic Noise Manual. When traffic noise impacts are predicted, examination and evaluation of alternative noise abatement measures must be considered for reducing or eliminating these impacts. Construction noise impacts may occur if noise-sensitive receptors are in proximity to project construction activities. All reasonable efforts should be made to minimize exposure of noise sensitive areas to construction noise impacts.

The source of this traffic noise information is the draft *Traffic Noise Report, Cape Fear Crossing, Brunswick and New Hanover Counties* (NCDOT 2019a). Any changes in the information presented below based on the final Traffic Noise Report will be disclosed in the Final Environmental Impact Statement.

4.3.1.1 Traffic Noise Impacts and Noise Contours

The maximum number of receptors in each project alternative predicted to become impacted by future traffic noise is shown in Table 4-3. The table includes those receptors expected to experience traffic noise impacts by either approaching or exceeding the FHWA Noise Abatement Criteria or by a substantial increase in exterior noise levels as defined in the NCDOT Traffic Noise Policy.

Table 4-3: Predicted Traffic Noise Impacts by Alternative¹

Alternative	Traffic Noise Impacts			Total
	Residential (NAC B)	Places of Worship/Schools, Parks, etc. (NAC C & D)	Businesses (NAC E)	
B	235	1	1	526
MA	190	3	0	390
NA	184	1	0	396
Q	232	3	1	433

Table 4-3: Predicted Traffic Noise Impacts by Alternative¹

Alternative	Traffic Noise Impacts			Total
	Residential (NAC B)	Places of Worship/Schools, Parks, etc. (NAC C & D)	Businesses (NAC E)	
T	229	1	1	453
V-AW	245	5	3	276

¹ Per TNM 2.5 and in accordance with 23 CFR Part 772

The maximum extent of the 71- and 66- dB(A) noise level contours are shown in the following table:

Table 4-4: Traffic Noise Contours

Alternative	Location	71 dB(A) (Feet from edge of nearest travel lane)	66 dB(A) (Feet from edge of nearest travel lane)
B	South of Cape Fear Crossing, west of Lanvale Road	Within ROW	395
B	North of Cape Fear Crossing, west of Lanvale Road	200	415
MA, NA	East of US 17, between Hazels Branch Road and Snowfield Road	185	360
Q, T, VA	East of US 17, just north of Hewett Burton Road	135	255
Q, T	East of US 17, just south of Provision Parkway	Within ROW	180/Within ROW
VA, B	East of US 17, just south of Provision Parkway	Within ROW	Within ROW/205
B, T, VA	East of US 17, just south of West Gate Drive	180/170/135	305/290/270
B	East of US 17, just south of West Gate Drive	145	270
VA	East of US 17, just south of Ploof Road	170	355
VA	West of US 17, just south of US 74	50	120
VA	East of US 17, just south of US 74	50	240
VA	South of US 74/76, just north of US 17	Within ROW	120

Table 4-4: Traffic Noise Contours

Alternative	Location	71 dB(A) (Feet from edge of nearest travel lane)	66 dB(A) (Feet from edge of nearest travel lane)
T	East of Cape Fear Crossing, just north of Shelmore Way	120	310
T	West of Cape Fear Crossing, just south of Shelmore Way	130	245
B, Q	West of Cape Fear Crossing, near Saw Grass Way	155	370
B, Q	East of Cape Fear Crossing, near Emberwood Drive	105	465
MA, NA	East of NC 133, south of Rabon Way	Within ROW	110
B, Q, T	East of NC 133, south of Rabon Way	Within ROW	100
Q, MA	South of Cape Fear Crossing, east of Bryan Road	Within ROW	Within ROW
Q, MA	East of Independence Blvd, just north of US 421	Within ROW	125
Q, MA	North of Cape Fear Crossing, just east of US 421	155	620
Q, MA	South of Cape Fear Crossing, north of the Antiqua neighborhood	110	400

4.3.1.2 Traffic Noise Abatement Measures

Measures for reducing or eliminating the traffic noise impacts were considered for all impacted receptors in each alternative. The primary noise abatement measures evaluated for highway projects include highway alignment changes, traffic system management measures, establishment of buffer zones, noise barriers and noise insulation (NAC D only). For each of these measures, benefits versus allowable abatement quantity (reasonableness), engineering feasibility, effectiveness and other factors were included in the noise abatement considerations.

Substantially changing the highway alignment to minimize noise impacts is not considered to be a viable option for this project due to engineering and/or environmental factors. Traffic system management measures are not considered viable for noise abatement due to the negative impact they would have on the capacity and level of service of the proposed roadway. Costs to acquire buffer zones for impacted receptors will exceed the NCDOT base dollar value of \$22,500 per benefited receptor plus an

incremental increase as defined in the NCDOT Traffic Noise Manual, causing this abatement measure to be unreasonable.

4.3.1.3 Noise Barriers

Noise barriers include two basic types: earthen berms and noise walls. These structures act to diffract, absorb and reflect highway traffic noise. For this project, earthen berms are not found to be a viable abatement measure because the additional right of way, materials and construction costs are estimated to exceed the NCDOT maximum allowable base quantity of 4,200 cubic yards per benefited receptor plus an incremental increase as defined in the NCDOT Traffic Noise Policy.

A noise barrier evaluation was conducted for this project utilizing the Traffic Noise Model (TNM 2.5) software developed by the FHWA. The following table summarizes the results of the evaluation.

Table 4-5: Preliminary Noise Barrier Evaluation Results

Alternative/ NSA	Noise Barrier and Location Description	Length / Height ² (feet)	Square Footage	Number of Benefited Receptors	Square Feet per Benefited Receptor / Allowable Square Feet per Benefited Receptor	Preliminarily Feasible and Reasonable (Likely) for Construction ¹
Alternative B						
NSA 13	Barrier 13 (Shoulder) along Cape Fear Crossing eastbound between I-140 and US 17	3,000/ 14	42,000	16	2,625/ 2,500	No ⁴
NSA 13	Barrier 13 Right of way along Cape Fear Crossing EB between I-140 and US 17	2,750/ 22	61,200	6	10,200/ 2,500	No ⁴
NSA 14	Barrier 14 along Cape Fear Crossing EB between I-140 and US 17	2,950/ 12	35,400	17	2,082/ 2,500	Yes

Table 4-5: Preliminary Noise Barrier Evaluation Results

Alternative/ NSA	Noise Barrier and Location Description	Length / Height ² (feet)	Square Footage	Number of Benefited Receptors	Square Feet per Benefited Receptor / Allowable Square Feet per Benefited Receptor	Preliminarily Feasible and Reasonable (Likely) for Construction ¹
NSA 15 & 16	Barrier 15/16 along Cape Fear Crossing WB between I-140 and US 17	6,300/ 16	100,800	62	1,626/ 2,500	Yes
NSA 29 & 30	Barrier 29/30 along Cape Fear Crossing EB between US 17 and NC 133	7,022/ 12	84,264	70	1,204/ 2,500	Yes
NSA 31	Barrier 31 along Cape Fear Crossing WB between NC 133 and US 17	4,078/ 16	65,248	73	894/ 2,500	Yes
NSA 40	Barrier 40 along Shipyards Blvd between US 421 and Newkirk Ave	1,853/ 18	32,963	54	610/ 2,500	Yes
NSA 42	Barrier 14 along Cape Fear Crossing EB between the Cape Fear River and US 421	4,949/ 23	115,311	247	466/ 2,500	Yes
NSA 43	Barrier 43 along proposed Shipyards Boulevard WB between US 421 and Burnett Blvd	2,890/ 24	69,360	60	1,155/ 2,500	Yes

Table 4-5: Preliminary Noise Barrier Evaluation Results

Alternative/ NSA	Noise Barrier and Location Description	Length / Height ² (feet)	Square Footage	Number of Benefited Receptors	Square Feet per Benefited Receptor / Allowable Square Feet per Benefited Receptor	Preliminarily Feasible and Reasonable (Likely) for Construction ¹
NSA 44	Barrier 44 along Cape Fear Crossing WB, US 421 SB, and proposed Shipyards Blvd	4,135/ 22	91,802	40	2,295/ 2,500	Yes
Alternative MA						
NSA 2	Barrier 2 along US 17 NB between Hazels Branch Road and I-140	600/ 10	6,000	2	3,000/ 1,500	No ⁴
NSA 3 (West)	Barrier 3 West along US 17 NB between Hazels Branch Road and I-140	450/ 10	4,500	2	2,250/ 2,500	Yes
NSA 3 (East)	Barrier 3 East along ramp from US 17 NB to Cape Fear Crossing EB	2,180/ 22	47,960	8	5,995/ 2,500	No ⁴
NSA 4 (South)	Barrier 4 South along US 17 SB between I-140 and Maco Road	550/ 14	7,700	3	2,567/ 2,000	No ⁴
NSA 4 (North)	Barrier 4 South along US 17 SB between I-140 and Maco Road	1,589/ 22	34,958	4	8,740/ 1,500	No ⁴
NSA 5	Barrier 5 along Cape Fear Crossing WB between US 17 and NC 133	5,367/ 24	128,808	77	1,673/ 2,500	Yes

Table 4-5: Preliminary Noise Barrier Evaluation Results

Alternative/ NSA	Noise Barrier and Location Description	Length / Height ² (feet)	Square Footage	Number of Benefited Receptors	Square Feet per Benefited Receptor / Allowable Square Feet per Benefited Receptor	Preliminarily Feasible and Reasonable (Likely) for Construction ¹
NSA 6	Barrier 6 along US 17 SB between Goodman Road and I-140	1,225/ 14	17,150	2	8,575/ 1,500	No ⁴
NSA 33 & 34	Barrier 33/34 along Cape Fear Crossing EB between River Road and US 421	4,300/ 24	103,200	10	10,320/ 2,500	No ⁴
NSA 35	Barrier 35 along Cape Fear Crossing EB between River Road and US 421	3,050/ 24	73,200	112	654/ 2,500	Yes
NSA 36	Barrier 36 along Independence Blvd EB between ramp to US 421 SB and US 421 entrance ramp	2,850/ 24	68,400	0	N/A / 1,500	No ³
NSA 37	Barrier 37 along Cape Fear Crossing/ Independence Blvd between River Road and South 17 th Street	4,450/ 22	100,100	13	7,700/ 2,500	No ⁴
Alternative NA						
NSA 2	Barrier 2 along US 17 NB between Hazels Branch Road and I-140	600/ 10	6,000	2	3,000/ 1,500	No ⁴

Table 4-5: Preliminary Noise Barrier Evaluation Results

Alternative/ NSA	Noise Barrier and Location Description	Length / Height ² (feet)	Square Footage	Number of Benefited Receptors	Square Feet per Benefited Receptor / Allowable Square Feet per Benefited Receptor	Preliminarily Feasible and Reasonable (Likely) for Construction ¹
NSA 3 (West)	Barrier 3 West along US 17 NB between Hazels Branch Road and I-140	450/ 10	4,500	2	2,250/ 2,500	Yes
NSA 3 (East)	Barrier 3 East along ramp from US 17 NB to Cape Fear Crossing EB	2,180/ 22	47,960	8	5,995/ 2,500	No ⁴
NSA 4 (South)	Barrier 4 South along US 17 SB between I-140 and Maco Road	550/ 14	7,700	3	2,567/ 2,000	No ⁴
NSA 4 (North)	Barrier 4 South along US 17 SB between I-140 and Maco Road	1,589/ 22	34,958	4	8,740/ 1,500	No ⁴
NSA 5	Barrier 5 along Cape Fear Crossing WB between US 17 and NC 133	5,367/ 24	128,808	77	1,673/ 2,500	Yes
NSA 6	Barrier 6 along US 17 SB between Goodman Road and I-140	1,225/ 14	17,150	2	8,575/ 1,500	No ⁴
NSA 40	Barrier 40 along Shipyard Blvd between US 421 and Newkirk Ave	1,853/ 18	32,963	54	610/ 2,500	Yes
NSA 42	Barrier 14 along Cape Fear Crossing EB between the Cape Fear River and US 421	4,949/ 23	115,311	247	466/ 2,500	Yes

Table 4-5: Preliminary Noise Barrier Evaluation Results

Alternative/ NSA	Noise Barrier and Location Description	Length / Height ² (feet)	Square Footage	Number of Benefited Receptors	Square Feet per Benefited Receptor / Allowable Square Feet per Benefited Receptor	Preliminarily Feasible and Reasonable (Likely) for Construction ¹
NSA 43	Barrier 43 along proposed Shipyard Boulevard WB between US 421 and Burnett Blvd	2,890/ 24	69,360	60	1,155/ 2,500	Yes
NSA 44	Barrier 44 along Cape Fear Crossing WB, US 421 SB, and proposed Shipyard Blvd	4,135/ 22	91,802	40	2,295/ 2,500	Yes
Alternative Q						
NSA 6	Barrier 6 along US 17 SB between Goodman Road and I-140	1,200/ 18	21,800	4	5,400/ 1,500	No ⁴
NSA 29 & 30	Barrier 29/30 along Cape Fear Crossing EB between US 17 and NC 133	7,022/ 12	84,264	70	1,204/ 2,500	Yes
NSA 31	Barrier 31 along Cape Fear Crossing WB between NC 133 and US 17	4,078/ 16	65,248	73	894/ 2,500	Yes
NSA 33 & 34	Barrier 33/34 along Cape Fear Crossing EB between River Road and US 421	4,300/ 24	103,200	10	10,320/ 2,500	No ⁴

Table 4-5: Preliminary Noise Barrier Evaluation Results

Alternative/ NSA	Noise Barrier and Location Description	Length / Height ² (feet)	Square Footage	Number of Benefited Receptors	Square Feet per Benefited Receptor / Allowable Square Feet per Benefited Receptor	Preliminarily Feasible and Reasonable (Likely) for Construction ¹
NSA 35	Barrier 35 along Cape Fear Crossing EB between River Road and US 421	3,050/ 24	73,200	112	654/ 2,500	Yes
NSA 36	Barrier 36 along Independence Blvd EB between ramp to US 421 SB and US 421 entrance ramp	2,850/ 24	68,400	0	N/A / 1,500	No ³
NSA 37	Barrier 37 along Cape Fear Crossing/ Independence Blvd between River Road and South 17 th Street	4,450/ 22	100,100	13	7,700/ 2,500	No ⁴
Alternative T						
NSA 6	Barrier 6 along US 17 SB between Goodman Road and I-140	1,350/ 16	21,600	3	7,200/ 1,500	No ⁴
NSA 28	Barrier 28 along Cape Fear Crossing EB between US 17 and NC 133	6,642/ 12	79,704	56	1,423/ 2,500	Yes
NSA 29	Barrier 29 along Cape Fear Crossing WB between NC 133 and US 17	6,800/ 16	100,800	130	837/ 2,500	Yes

Table 4-5: Preliminary Noise Barrier Evaluation Results

Alternative/ NSA	Noise Barrier and Location Description	Length / Height ² (feet)	Square Footage	Number of Benefited Receptors	Square Feet per Benefited Receptor / Allowable Square Feet per Benefited Receptor	Preliminarily Feasible and Reasonable (Likely) for Construction ¹
NSA 40	Barrier 40 along Shipyard Blvd between US 421 and Newkirk Avenue	1,853/ 18	32,963	54	610/ 2,500	Yes
NSA 42	Barrier 14 along Cape Fear Crossing EB between the Cape Fear River and US 421	4,949/ 23	115,311	247	466/ 2,500	Yes
NSA 43	Barrier 43 along proposed Shipyard Boulevard WB between US 421 and Burnett Blvd	2,890/ 24	69,360	60	1,155/ 2,500	Yes
NSA 44	Barrier 44 along Cape Fear Crossing WB, US 421 SB, and proposed Shipyard Blvd	4,135/ 22	91,802	40	2,295/ 2,500	Yes
Alternative V-AW						
NSA 6	Barrier 6 along US 17 SB between Goodman Road and I-140	1,700/ 18	30,600	4	7,650/ 1,500	No ⁴
NSA 20	Barrier 20 along US 17 NB between south of West Gate Road and Ocean Gate Road	2,000/ 24	48,000	0	N/A / 1,500	No ³

Table 4-5: Preliminary Noise Barrier Evaluation Results

Alternative/ NSA	Noise Barrier and Location Description	Length / Height ² (feet)	Square Footage	Number of Benefited Receptors	Square Feet per Benefited Receptor / Allowable Square Feet per Benefited Receptor	Preliminarily Feasible and Reasonable (Likely) for Construction ¹
NSA 21	Barrier 21 along US 17 NB between Ocean Gate Road and US 74/76	2,184/ 24	52,416	0	N/A / 1,500	No ³
NSA 22	Barrier 22 along US 17 NB between Ploof Road and US 74/76	2,181/ 24	52,344	138	379/ 1,500	Yes
NSA 23	Barrier 23 along US 74/76 EB between the project's western terminus and Olde Waterford Way	1,950/ 20	39,000	17	2,294/ 1,500	No ⁴
NSA 24	Barrier 24 along US 74/76 WB between US 17 and River Road	5,079/ 24	81,264	38	2,139/ 1,500	No ⁴
NSA 25	Barrier 25 along US 74/76 EB between US 17 and River Road	2,035/ 16	32,560	3	10,853/ 1,500	No ⁴
NSA 26	Barrier 26 along US 74/76 WB between the Brunswick River and River Road	2,130/ 12	22,560	7	3,737/ 1,500	No ⁴
NSA 27	Barrier 27 along US 74/76 EB between River Road and the Brunswick River	2,037/ 14	28,518	5	5,704/ 1,500	No ⁴

Table 4-5: Preliminary Noise Barrier Evaluation Results

Alternative/ NSA	Noise Barrier and Location Description	Length / Height ² (feet)	Square Footage	Number of Benefited Receptors	Square Feet per Benefited Receptor / Allowable Square Feet per Benefited Receptor	Preliminarily Feasible and Reasonable (Likely) for Construction ¹
NSA 45 (North)	Barrier 45 North along US 421 NB between North Carolina Avenue and Greenfield Street	745/ 20	14,900	2	7,450/ 1,500	No ⁴
NSA 45 (South)	Barrier 45 South along US 421 NB between Ivey Circle and Alabama Avenue	319/ 14	4,446	5	893/ 2,000	Yes
NSA 46	Barrier 46 along EB Burnett Road / Carolina Beach Road connector between Burnett Road and US 421	1,823/ 21	39,144	21	1,864/ 2,500	Yes
NSA 47	Barrier 47 along South 3 rd Street between Kidder Street and Greenfield Street	837/ 14	11,718	60	195/ 1,500	Yes

¹ The likelihood for barrier construction is preliminary and subject to change, pending completion of final design and the public involvement process.

² Average wall height. Actual wall height at any given location may be higher or lower.

³ Barrier is not feasible due to an inability to achieve a minimum of 5 dB(A) of noise reduction for at least two impacted receptors.

⁴ Barrier is not reasonable due to the quantity per benefited receptor exceeding the allowable quantity per benefited receptor.

Additionally, six NAC “D” locations within three alternatives were considered for noise insulation. Little information is available at this time to determine actual costs. Preliminarily, it is believed each of these locations is a likely candidate for noise insulation as an abatement measure. Table 4-6 summarizes the results of the evaluation.

Table 4-6: Preliminary Noise Insulation Evaluation Results

Alternative/NSA	Impacted Receptor – Location	Feasible	Reasonable	Likely
Alternative MA				
NSA 37	2979–3504 Carolina Beach Road	Yes	Yes	Yes
NSA 37	3037–3736 Carolina Beach Road	Yes	Yes	Yes
Alternative Q				
NSA 37	2979–3504 Carolina Beach Road	Yes	Yes	Yes
NSA 37	3037–3736 Carolina Beach Road	Yes	Yes	Yes
Alternative V-AW				
NSA 45	1420.1–2011 Carolina Beach Road	Yes	Yes	Yes
NSA 46	1505–314 South Carolina Ave	Yes	Yes	Yes

4.3.1.4 Summary

A traffic noise evaluation was performed that identified 17 noise barriers, some of which occur in more than one alternative, that preliminarily meet feasibility and reasonableness criteria found in the NCDOT Traffic Noise Policy. A more detailed analysis will be completed during project final design. Noise barriers preliminarily found to be feasible and reasonable during the preliminary noise analysis may not be found to be feasible and reasonable during the final design noise analysis due to changes in proposed project alignment and other design considerations, surrounding land use development, or utility conflicts, among other factors. Conversely, noise barriers that preliminarily were not considered feasible and reasonable may meet the established criteria and be recommended for construction.

In accordance with NCDOT Traffic Noise Policy, the Federal/State governments are not responsible for providing noise abatement measures for new development for which building permits are issued after the Date of Public Knowledge. The Date of Public Knowledge of the proposed highway project will be the approval date of the Record of Decision (ROD). NCDOT strongly advocates the planning, design and construction of noise-compatible development and encourages its practice among planners, building officials, developers and others.

4.3.2 Air Quality

For each alternative there may be localized areas where VMT would increase, and other areas where VMT would decrease. Therefore, it is possible that localized increases and decreases in MSAT emissions may occur. The localized increases in MSAT emissions would likely be most pronounced along the new roadway sections that would be built to the south of existing US 17 in eastern Brunswick County and near the new alignment sections near the Port of Wilmington. However, even if these increases do occur, they too will be substantially reduced in the future due to implementation of EPA's vehicle and fuel regulations.

In sum, under all build alternatives in the design year it is expected there would be reduced MSAT emissions in the immediate area of the project, relative to the No-Build Alternative, due to EPA's MSAT reduction programs.

4.3.2.1 Mobile Source Air Toxics

Background

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA assessed this expansive list in its rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007), and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS). In addition, EPA identified nine compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 2011 National Air Toxics Assessment (NATA). These are 1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority MSAT, the list is subject to change and may be adjusted in consideration of future EPA rules.

According to EPA, the latest model MOVES2014 is a major revision to MOVES2010 and improves upon it in many respects. MOVES2014 includes new data, new emissions standards, and new functional improvements and features. It incorporates substantial new data for emissions, fleet, and activity developed since the release of MOVES2010. These new emissions data are for light- and heavy- duty vehicles, exhaust and evaporative emissions, and fuel effects. MOVES2014 also adds updated vehicle sales, population, age distribution, and vehicle miles travelled (VMT) data.

MOVES2014 incorporates the effects of three new Federal emissions standard rules not included in MOVES2010. These new standards are all expected to impact MSAT emissions and include Tier 3 emissions and fuel standards starting in 2017 (79 FR 60344), heavy-duty greenhouse gas regulations that phase in during model years 2014-2018 (79 FR 60344), and the second phase of light duty greenhouse gas regulations that phase in during model years 2017-2025 (79 FR 60344). Since the release of MOVES2014, EPA has released MOVES2014a. In the November 2015 MOVES2014a Questions and Answers Guide, EPA states that for on-road emissions, MOVES2014a adds new options requested by users for the input of local VMT, includes minor updates to the default fuel tables, and corrects an error in MOVES2014 brake wear emissions. The change in brake wear emissions results in small decreases in PM emissions, while emissions for other criteria pollutants remain essentially the same as MOVES2014.

Using EPA's MOVES2014a model, FHWA estimates that even if VMT increases by 45 percent from 2010 to 2050 as forecast, a combined reduction of 91 percent in the total annual emissions for the priority MSAT is projected for the same time period.

Diesel PM is the dominant component of MSAT emissions, making up 50 to 70 percent of all priority MSAT pollutants by mass, depending on calendar year. Users of MOVES2014a will notice some differences in emissions compared with MOVES2010b. MOVES2014a is based on updated data on some emissions and pollutant processes compared to MOVES2010b, and also reflects the latest Federal emissions standards in place at the time of its release. In addition, MOVES2014a emissions forecasts are based on lower VMT projections than MOVES2010b, consistent with recent trends suggesting reduced nationwide VMT growth compared to historical trends.

MSAT analyses are intended to capture the net change in emissions within an affected environment, defined as the transportation network affected by the project. The affected environment for MSATs may be different than the affected environment defined in the NEPA document for other environmental effects, such as noise or wetlands. Analyzing MSATs only within a geographically-defined “study area” will not capture the emissions effects of changes in traffic on roadways outside of that area, which is particularly important where the project creates an alternative route or diverts traffic from one roadway class to another. At the other extreme, analyzing a metropolitan area’s entire roadway network will result in emissions estimates for many roadway links not affected by the project, diluting the results of the analysis.

4.3.2.2 Incomplete or Unavailable Information for Project Specific MSAT Health Impact Analysis

In FHWA’s view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The EPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is “a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects.” Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). A number of HEI studies are summarized in Appendix D of FHWA’s Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents. Among the adverse health effects linked to MSAT compounds at high exposures are: cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the

exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations or in the future as vehicle emissions substantially decrease.

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts – each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable.

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI. As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA states that with respect to diesel engine exhaust, “[t]he absence of adequate data to develop a sufficiently confident dose-response relationship from the epidemiologic studies has prevented the estimation of inhalation carcinogenic risk (www.epa.gov/iris).”

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an “acceptable” level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA’s approach to addressing risk in its two-step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties

associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

Conclusion

For each alternative there may be localized areas where VMT would increase, and other areas where VMT would decrease. Therefore, it is possible that localized increases and decreases in MSAT emissions may occur. The localized increases in MSAT emissions would likely be most pronounced along the new roadway sections that would be built to the south of existing US 17 in eastern Brunswick County and near the new alignment sections near the Port of Wilmington. However, even if these increases do occur, they too will be substantially reduced in the future due to implementation of EPA's vehicle and fuel regulations.

In sum, under all build alternatives in the design year it is expected there would be reduced MSAT emissions in the immediate area of the project, relative to the No-Build Alternative, due to EPA's MSAT reduction programs.

Summary

Vehicles are a major contributor to decreased air quality because they emit a variety of pollutants into the air. Changing traffic patterns are a primary concern when determining the impact of a new highway facility or the improvement of an existing highway facility. New highways or the widening of existing highways increase localized levels of vehicle emissions, but these increases could be offset due to increases in speeds from reductions in congestion and because vehicle emissions will decrease in areas where traffic shifts to the new roadway. Significant progress has been made in reducing criteria pollutant emissions from motor vehicles and improving air quality, even as vehicle travel has increased rapidly.

The proposed project is located in Brunswick and New Hanover Counties, which complies with the NAAQS. The proposed project is located within an attainment area; therefore, 40 CFR Parts 51 and 93 are not applicable. Therefore, the project is not anticipated to create any adverse effects on the air quality of this attainment area. This evaluation completes the assessment requirements for air quality of the 1990 Clean Air Act Amendments and the NEPA process. No additional reports are necessary.

4.3.3 Sea Level Rise

The potential impacts of sea level rise on roadway infrastructure may include, but are not limited to, impacts on coastal water quality, evacuation, natural systems, recreation, or roadway efficiencies including mobility and accessibility. Mitigating these impacts may be accomplished through structured or soft buffers to hold back or reduce the pressure from the sea or the elevation of land surfaces or structures. In an effort to reduce the potential impact of flooding and storm surge on transportation infrastructure, the expected sea level rise can be a consideration used during final design of the roads

and structures. FHWA and NCDOT acknowledge that there are risks and uncertainty in the future regarding sea level rise and storm events.

The *Sea Level Rise Assessment for Cape Fear Crossing* (NCDOT 2019b) evaluated locations across the project alternatives that would potentially be regularly inundated or at-risk due to sea level rise over an 81-year period (2019-2100). This assessment examines scenarios for the current year (2019), the proposed project's design year (2040), and the United States Army Corps of Engineers (USACE) Sea Level Change Curve Calculator's furthest projection (2100), and is based on tide gauge projections and includes a low scenario, medium scenario, and high scenario.

- Low scenario (current mean sea level / 0-foot sea level rise)
- Intermediate scenario (1-foot sea level rise)
- High scenario (5-foot sea level rise)

The scenarios chosen to model sea level rise projections to 2100 were computed using tide gauge projections (located in Wilmington, North Carolina) calculated by the USACE. Using the information provided in the USACE tool, maps were created using Geographic Information Systems (GIS) sea level rise data from the National Oceanic Atmospheric Administration (NOAA).

According to the sea level rise projections generated by the USACE and NOAA, many of the proposed alternatives that bound the Cape Fear River, Brunswick River, Town Creek, and/or Alligator Creek are vulnerable to inundation. All DSAs would likely experience inundation or be at-risk for inundation. The assessment showed that some alternatives would potentially be inundated, depending on the scenario applied (low, intermediate, or high), as shown below in Table 4-7. When each SLR scenario is applied to the DSAs, Alternative V-AW would experience the greatest impacts along the facility.

Table 4-7: Summary of Inundation Length along Detailed Study Alternatives

Alternatives	Proposed Total Length (miles)	Proposed Cape Fear Bridge Length (miles)	Low Scenario (SLR 0 ft) (miles)	Intermediate Scenario (SLR 1 ft) (miles)	High Scenario (SLR 5 ft) (miles)
Alternative B	28.98	2.97	0	0.01	0.61
Alternative M Avoidance	43.33	3.11	0.42	0.58	1.62
Alternative N Avoidance	32.86	3.00	0.21	0.24	0.97
Alternative Q	32.62	3.10	0	0.01	0.61
Alternative T	26.96	2.97	0	0.01	0.44
Alternative V-AW	29.78	1.09 ^a	0	1.34	5.93

Note: These lengths are based on the proposed mainline, side streets, ramps, and loops.

^a The bridge length of Alternative V-AW also includes the bridge over Alligator Creek. The low, intermediate, and high scenario data is based on projected sea level rise data from NOAA.

Source: NCDOT 2019b

4.3.4 Farmland Impacts

The FPPA of 1981 (7 CFR 658), implemented by the USDA NRCS, requires all federal agencies or state agencies that receive federal funding to consider the impact of land acquisition and construction activities on farmland in an effort to “minimize the extent to which federal programs contribute to the unnecessary conversion of farmland to non-agricultural uses.” According to FPPA, farmland includes prime farmland, unique farmland, and farmland of statewide or local importance (Public Law 97-98, Section 1539-1549, 7 United States Code [U.S.C.] 4201 et seq.).

All the detailed study alternatives would impact prime farmland. Prime farmland does not include land already in or committed to urban development or water storage. Prime farmland “already in” urban development includes all land that has been designated for commercial or industrial use, or residential use that is not intended at the same time to protect farmland in a:

- Zoning code or ordinance adopted by the state or local unit of government or
- A comprehensive land use plan that has expressly been either adopted or reviewed in its entirety by the unit of local government in whose jurisdiction it is operative within 10 years preceding the implementation of the project

Under North Carolina state law, local governments can offer VAD in the local jurisdictions, which provide land owners with a voluntary way to support the conservation and preservation of farmland from non-farm development. Lands under VAD protection have a conservation agreement between the land owner and the local jurisdiction that prohibits non-farm use or development for a period of at least 10 years. In Brunswick County, five parcels are designated as VADs that represent four farms. These parcels are not anticipated to be impacted by any of the detailed study alternatives.

In accordance with the FPPA, the amount of farmland soils found within the DCIA was calculated. Table 4-8 shows the anticipated farmland impacts associated with each detailed study alternative.

Table 4-8: Farmland Impacts

Alternative	Farmland Impact (acres)					
	All areas are prime farmland	Farmland of statewide or local importance	Farmland of unique importance	Not prime farmland	Prime farmland if drained	Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
Alternative B	63.2	143.2	74.3	215.8	173.3	10.8
Alternative M Avoidance	132.8	226.2	150.0	217.2	44.6	11.5
Alternative N Avoidance	127.0	225.8	72.5	225.3	44.4	10.8
Alternative Q	64.1	132.6	112.0	215.9	108.0	11.4
Alternative T	61.2	120.7	59.0	214.1	105.6	10.8
Alternative V-AW	23.4	38.6	13.1	206.5	76.6	128.5

Impacts were calculated using the proposed functional design right-of-way limits. A preliminary screening of farmland conversion impacts was completed as a part of the 2015 CIA for all alternatives (NRCS Form AD-1006, Part VI only). As noted in 7 CFR 658.4(a), "Farmland 'committed to urban development or water storage' includes all such land that receives a combined score of 160 points or less from the land evaluation and site assessment criteria." Total scores of 33 for Alternative V-AW, 41 for Alternatives B, Q, and T, and 51 for Alternatives M Avoidance and N Avoidance out of a possible 160 points were calculated. Higher scores indicate a lesser potential for farmland conversion impacts. Since none of the total site assessment scores exceed the 60-point threshold established by the NRCS, farmland conversion impacts may be anticipated, but are not to be given further consideration for protection (7 CFR 658.4(c)).

4.3.5 Utility Impacts

All the detailed study alternatives would impact both private and public utilities. Impacts would include the relocation, adjustment, or modification of gas, water, electric, sewer, telephone, and fiber optic cable lines. The relocation of power poles also would be required as a result of the proposed project.

4.3.6 Hazardous Materials Impacts

As discussed in Section 3.3.5, 40 potential hazardous sites were identified by the *Hazardous Materials Report* within the project study area (NCDOT 2015b). A full description of these sites can be found within the report.

Table 4-9 identifies the potential contaminated sites found within the 1,000-foot corridor of each detailed study alternative. Preliminary site assessments to identify the nature and extent of any contamination will be performed on these sites prior to right-of-way acquisition.

Table 4-9: Potentially Contaminated Sites

Alternative	Number of Potentially Hazardous Sites	Anticipated Severity	Potentially Contaminated Properties ^a
B	6	Low	Sites 15, 16, 17
		High	Sites 8, 9, 14
M Avoidance	6	Low	Sites 1, 11, 12, 13, 15
		High	Site 14
N Avoidance	7	Low	Sites 1, 15, 16, 17
		High	Sites 8, 9, 14
Q	0	None	No Sites
T	6	Low	Sites 15, 16, 17
		High	Sites 8, 9, 14,
V-AW	25	Low to High	Sites 10, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37
		High	Site 14

^a Potentially contaminated site numbers correspond to the *Hazardous Materials Report* (NCDOT 2015b).

4.3.7 Mineral Resources

As discussed in Section 3.3.6, the only mine located within the project study area is a sand and granite mine, which is no longer operational. The mine was located north of the Cape Fear Memorial Bridge along the Cape Fear River. No impacts to the mine are anticipated.

4.3.8 Floodplains/Floodways Impacts

All the detailed study alternatives would cross floodplains and include major hydraulic structures (defined as requiring a conveyance greater than 72 inches) in a Federal Emergency Management Agency (FEMA) Special Flood Hazard Zone. Hydraulic design for these crossings would not create constraints to flow. Therefore, upstream floodways would not be affected by placement of these structures.

In accordance with Executive Order 11988, the Hydraulics Unit will coordinate with the North Carolina Floodplain Mapping Program (FMP), the delegated state agency for administering FEMA's National Flood Insurance Program, to determine the status of the project with regard to applicability of NCDOT's Memorandum of Agreement with FMP (dated June 5, 2008), or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

The construction of the proposed project would encroach in several areas on the designated floodplain associated with several local stream systems. Table 4-10 summarizes the impacts to floodplains and floodways within the project study area from each of the detailed study alternatives.

Table 4-10: FEMA Floodplain and Floodway Impacts

Alternative	Impacts to 100-year Floodplain (acres)	Impacts to Floodway (acres)
B	14.3	2.8
M Avoidance	35.7	2.1
N Avoidance	34.0	2.1
Q	31.7	2.6
T	28.8	2.6
V-AW	214.4	0.4

Note: Impacts were calculated using the functional design construction slope stake limits plus 40 feet.

A description of the proposed hydraulic crossings is provided in Table 4-11 and shown on Figure 4-1 through Figure 4-12.

Table 4-11: Summary of Hydraulic Recommendations

Site Number	Alternative	Feature Under Structure	Proposed Structure
1 ^a	MA, NA	Bishop Branch	Extend existing 3 at 8x6 box culvert
2	MA, NA	Bishop Branch	Bridge at 520 feet to span wetlands
2A	MA, NA	Bishop Branch	Bridge at 660 feet to span main wetlands
3	MA, NA	Morgan Branch	Bridge at 980 feet to span wetlands
4	MA, NA	Goodland Branch	3 at 6x6 box culvert
5	MA, NA	UT to Goodland Branch	2 at 6x6 box culvert
6	MA, NA	UT to Goodland Branch	1 at 6x6 box culvert

Table 4-11: Summary of Hydraulic Recommendations

Site Number	Alternative	Feature Under Structure	Proposed Structure
7	MA, NA	UT to Town Creek	1 at 6x6 box culvert
8	MA, NA	Little Mallory Creek	1 at 8x6 box culvert
10	B, MA, NA, Q, T	Mallory Creek	Span CAMA wetlands
11	B, MA, NA, Q, T	UT to Mallory Creek	Bridge at 15,705 feet (Alternatives B, T) 16,353 feet (Alternative Q) 16,403 feet (Alternative MA) 15,842 feet (Alternative NA)
11A	B, MA, NA, Q, T	UT to Mallory Creek	Bridge at 15,705 feet (Alternative B, T) 16,353 feet (Alternative Q) 16,403 feet (Alternative MA) 15,842 feet (Alternative NA)
12	MA, Q	Cape Fear River	Bridge at 16,353 feet (Alternative Q) 16,403 feet (Alternative MA)
13	MA, Q	UT to Barnards Creek	Bridge at 16,353 feet (Alternative Q) 16,403 feet (Alternative MA)
14	MA, Q	UT to Barnards Creek	3 at 6x6 box culvert
15	MA, Q	UT to Barnards Creek	2 at 6x6 box culvert
16 ^a	MA, Q	UT to Barnards Creek	2 at 6x6 box culvert
18 ^a	MA, NA, Q, T, V-AW	UT to Morgan Branch	3 at 8x6 box culvert
19 ^a	Q, T, V-AW	Morgan Branch	3 at 8x6 box culvert
20 ^a	MA, NA	UT to Morgan Branch	Widen existing bridge
21 ^a	MA, NA	UT to Morgan Branch	Widen existing bridge
22	B	UT to Morgan Branch	1 at 8x6 box culvert
23	B	UT to Morgan Branch	1 at 8x6 box culvert
24	B	UT to Jackeys Creek	Bridge at 142 feet
26	B, Q, T	UT to Piney Branch	1 at 7x6 box culvert
27	B, Q, T	Piney Branch	3 at 7x6 box culvert
28	B, Q	Mallory Creek Tributary	Downstream bridge at 440 feet and upstream bridge at 510 feet to span wetlands
29	B, Q	Mallory Creek	Bridge at 800 feet to span main wetlands
30	T	Mallory Creek	Bridge at 770 feet to span main wetlands
33 ^a	B, MA, NA, Q, T	Mallory Creek	Bridge at 95 feet
34	B, Q, T	Mallory Creek	Bridge at 15,705 feet (Alternatives B, T) 16,353 feet (Alternative Q)

Table 4-11: Summary of Hydraulic Recommendations

Site Number	Alternative	Feature Under Structure	Proposed Structure
35	B, NA, T	Cape Fear River	Bridge at 15,705 feet (Alternatives B, T) 15,842 feet (Alternative NA)
36 ^a	B, Q, T, V-AW	Jackeys Creek	Bridge at 240 feet
37	V-AW	UT to Jackeys Creek	2 at 6x6 box culvert
38 ^a	V-AW	Brunswick River	Widen existing bridge
39 ^a	V-AW	Alligator Creek	Widen existing bridge
41	V-AW	Cape Fear River	Bridge at 4,951 feet
42	V-AW	UT to Greenfield Creek	Bridge at 4,951 feet
43	V-AW	Greenfield Creek	Bridge at 4,951 feet
44 ^a	V-AW	Greenfield Creek	Extend 3 at 8x6 box culvert
45	MA, Q	Unnamed Tributary	Bridge at 16,353 feet (Alternative Q) 16,403 feet (Alternative MA)
46	MA, Q	East Fork Creek	2 at 6x6 box culvert

MA = M Avoidance; NA = N Avoidance; UT = Unnamed Tributary

^a Denotes crossing with an existing major hydraulic structure.

4.3.9 Protected Lands Impacts

4.3.9.1 Wild and Scenic Rivers

As noted in Section 3.3.8.1, no Wild and Scenic Rivers are located in the project study area.

4.3.9.2 State/National Forests

As noted in Section 3.3.8.2, no state or national forests are located in the project study area.

4.3.9.3 Gamelands and Preservation Areas

As noted in Section 3.3.8.3, no gamelands are located in the project study area. All the detailed study alternatives would impact preservation areas (Table 4-12). Additional information regarding these sites is included in Section 3.3.8.3.

Table 4-12: Preservation Area Impacts

Preservation Area Impacts (acres)	Alternative					
	B	M Avoidance	N Avoidance	Q	T	V-AW
Barnards Creek Natural Area	0.00	0.00	0.00	0.00	0.00	0.00
Battle Royal Bay	8.10	0.00	0.00	0.00	0.00	0.00

Table 4-12: Preservation Area Impacts

Preservation Area Impacts (acres)	Alternative					
	B	M Avoidance	N Avoidance	Q	T	V-AW
Brunswick River/Cape Fear River Marshes	0.00	0.00	0.00	0.00	0.00	129.27
Clarendon Plantation Limesinks	0.00	0.00	0.00	0.00	0.00	0.00
Greenfield Lake	0.00	0.00	0.00	0.00	0.00	0.00
Henrytown Savanna	0.00	0.00	0.00	0.00	0.00	0.00
Little Green Swamp	0.00	0.00	0.00	0.00	0.00	0.00
Lower Cape Fear River Aquatic Habitat	21.36	21.92	21.36	21.92	21.36	0.00
Mott Creek Natural Area	0.00	0.00	0.00	0.00	0.00	0.00
Pleasant Oaks/Goose Landing Plantations	0.00	0.00	0.00	0.00	0.00	0.00
South Wilmington Sandhills	0.00	0.00	0.00	0.00	0.00	0.00
Sturgeon Creek Tidal Wetlands	0.00	0.00	0.00	0.00	0.00	0.00
Town Creek Aquatic Habitat	0.00	0.00	0.00	0.00	0.00	10.49
Town Creek Marshes and Swamp	0.00	9.10	9.10	0.00	0.00	0.00
TOTAL	29.46	31.02	30.46	21.92	21.36	139.76

Note: Impacts were calculated using the proposed functional design right-of-way limits.

4.4 Cultural Resources Impacts

4.4.1 Historic Architectural Resources

Adverse effects are defined in 36 CFR 800 (Section 106) as occurring when a proposed action, such as the introduction of a new or larger roadway facility, may alter, directly or indirectly, any of the characteristics of a historic property that qualify the historic property for inclusion in the NRHP in a manner that would diminish its integrity. Adverse effects can include destruction or alteration of the property; isolation of the property from its surrounding environment; and introduction of visual, audible, or atmospheric elements that are out of character with the property (36 CFR 800.5). As determined by FHWA, NCDOT, and HPO at effects meetings held May 24, 2017, and October 30, 2018, and February 12, 2019, the proposed project would have adverse effects upon historic properties as summarized in Table 4-13 (NCDOT, FHWA, and HPO 2019). Figure 4-13 through Figure 4-24 depict

potential effects to historic properties. Avoidance, modification, and mitigation suggestions are included in the Concurrence Form for Assessment of Effects document provided by NCDOT in Appendix A. Once the preferred alternative is selected, measures to address and resolve adverse effects will be taken (36 CFR 800.6).

Table 4-13: Historic Architectural Resource Effects

Historic Property	Alternative					
	B	M Avoidance	N Avoidance	Q	T	V-AW
USS North Carolina	No Effect	No Effect	No Effect	No Effect	No Effect	No Adverse Effect
Wilmington Historic District	No Effect	No Effect	No Effect	No Effect	No Effect	Adverse Effect
Southern and Northwest Sections of Lake Forest Defense Housing	No Effect	No Effect	No Effect	No Effect	No Effect	No Adverse Effect
Sunset Park Historic District	No Effect	No Effect	No Effect	No Effect	No Effect	Adverse Effect
Sunset Park School	No Effect	No Effect	No Effect	No Effect	No Effect	No Adverse Effect with commitments
Jacob and Sarah Horowitz House	No Effect	No Effect	No Effect	No Effect	No Effect	Adverse Effect
Hanover Heights Historic District	No Adverse Effect with commitments	No Effect	No Adverse Effect with commitments	No Effect	No Adverse Effect with commitments	No Effect
Wilmington National Guard Armory	No Effect	No Effect	No Effect	No Effect	No Effect	No Adverse Effect with commitments
DH Lippitt House/Clarendon House	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect
Goodman House & Doctor's Office	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect

4.4.2 Archaeological Resources

Five previously recorded sites lie within one or more of the detailed study alternative corridors under consideration. These sites include two in Brunswick County, 31BW602 and 31BW604, and three in New Hanover County, 31NH018, 31NH024, and 31NH560. The two sites in Brunswick County have been recommended as ineligible for the NRHP. Two sites in New Hanover County (31NH018 and 31NH024)

have not been evaluated for NRHP eligibility. Site 31NH560 has been recommended ineligible for the NRHP.

The Cape Fear Crossing project area was stratified into high probability and low probability zones of potential archaeological resource presence. Table 4-14 notes the acreage within the detailed study alternative corridor with a probable presence, as well as the percentage of high and low probability of an archaeological presence for each corridor within the broader study area were calculated and are shown in Table 4-14.

Table 4-14: Archaeological Probability for Cape Fear Crossing

Alternative	High (acres)	High (%)	Low (acres)	Low (%)	Total (acres)	Sort by Acreage	Sort by Percent
B	250.7	34.4	478.9	65.6	729.6	6	6
M Avoidance	481.1	62.2	292.4	37.8	773.5	1	2
N Avoidance	370.3	49.0	385.1	51.0	755.4	3	4
Q	390.8	61.3	247.0	38.7	637.8	2	3
T	273.0	43.9	348.4	56.1	621.4	5	5
V-AW	318.0	63.9	179.8	36.1	497.8	4	1

Source: NCDOT (2017f)

Note: Impacts were calculated using the 1,000-foot corridor limits.

Following completion of the DEIS and the identification of the preferred alternative, a Phase I field survey will be conducted to identify the presence/absence of archaeological sites within the limits of the preferred alternative and to determine which, if any, resources are eligible for listing on the NRHP.

4.5 Natural Environment Impacts

4.5.1 Soils/Topographical/Geological Impacts

No major changes to geology or topography are anticipated as a result of any of the detailed study alternatives or the No-Build Alternative. Bridge structures and grade separations may require some fill or excavation to topography in the vicinity of the larger stream and wetland systems. Otherwise, it is anticipated that existing elevations would be maintained along the remainder of the routes.

Soil properties along the detailed study alternatives could affect the final engineering design of the proposed project. The most common soil limitations within the project study area include poor drainage, high water table, susceptibility to flooding, and loose, sandy soils. No soil impacts are associated with the No-Build Alternative.

4.5.2 Biotic Communities and Wildlife

4.5.2.1 Terrestrial Community Impacts

Impacts to terrestrial communities resulting from land clearing are unavoidable. Project construction activities in or near terrestrial resources have the potential to impact the biological function of these resources. Table 4-15 summarizes the anticipated impacts of the detailed study alternatives on terrestrial communities.

Table 4-15: Terrestrial Community Impacts

Terrestrial Community Impacts (acres)	Alternative					
	B	M Avoidance	N Avoidance	Q	T	V-AW
Coastal Plain Bottomland Hardwood - Blackwater Subtype	1.06	1.37	0.27	2.35	1.27	1.07
Coastal Plain Small Stream Swamp - Blackwater Subtype	6.73	16.97	10.09	8.75	0.51	6.83
Cutover	9.46	13.73	13.73	8.32	0.62	0.62
Cypress/Gum Swamp - Blackwater Subtype	12.13	21.65	21.65	12.13	6.53	0.00
Estuarine Woody Wetland	0.00	0.00	0.00	0.00	0.00	35.57
Maintained/Disturbed	210.31	282.32	272.57	226.92	229.99	280.98
Mesic Pine Flatwoods	102.54	239.13	200.27	145.90	111.00	39.42
Nonriverine Swamp Forest	0.13	2.23	2.23	0.00	0.00	0.00
Nonriverine Wet Hardwood Forest	11.76	5.67	5.64	8.63	13.47	21.89
Pine Plantation	145.75	47.52	40.98	101.40	87.89	0.70
Pocosin	49.11	1.57	1.57	6.20	6.43	0.55
Salt/Brackish Marsh	64.89	67.77	70.06	63.73	64.89	79.59
Small Depression Pocosin	0.05	0.59	0.42	0.21	0.16	0.00
Wet Pine Flatwoods	41.61	43.62	42.30	20.85	17.79	6.51
Xeric Sandhill Scrub	0.23	8.65	0.23	8.65	0.27	1.45
TOTAL	655.76	752.79	682.02	614.04	540.82	475.18

Note: Impacts were calculated using the proposed functional design right-of-way limits.

FHWA has developed guidance on addressing the potential problems associated with roadside invasive plants. The proposed project will comply with the requirements set forth in Executive Order 13112 and FHWA guidance on invasive species (FHWA 1999).

4.5.2.2 Terrestrial Wildlife Impacts

Terrestrial communities found along the detailed study alternatives serve as shelter, nesting, and foraging habitat for numerous species of wildlife. Any of the detailed study alternatives would result in direct impact to both natural and altered terrestrial communities through clearing of vegetation, grading, and paving. Impacts to terrestrial communities are shown in Table 4-15. Forested areas provide connectivity between populations, allowing for gene flow, as well as a means of safe travel from one foraging area to another. Table 4-16 summarizes the anticipated impacts of the detailed study alternatives on forests in the study area.

Table 4-16: Forest Impacts

	Alternative					
	B	M Avoidance	N Avoidance	Q	T	V-AW
Forest Impacts (acres)	371	380	325	306	245	113

Note: Impacts were calculated using the proposed functional design right-of-way limits.

Forested areas are considered to include the following terrestrial communities:

- Coastal Plain Bottomland Hardwood - Blackwater Subtype
- Coastal Plain Small Stream Swamp - Blackwater Subtype
- Cypress/Gum Swamp - Blackwater Subtype
- Estuarine Woody Wetland
- Mesic Pine Flatwoods
- Nonriverine Swamp Forest
- Nonriverine Wet Hardwood Forest
- Pine Plantation
- Pocosin
- Small Depression Pocosin
- Wet Pine Flatwoods

Temporary fluctuation in populations of animal species that use terrestrial areas is anticipated during the course of construction. Slow-moving, burrowing, and subterranean organisms would be directly impacted by construction activities, while mobile organisms would be displaced to adjacent communities. Habitat reduction can occur when project construction affects undisturbed areas surrounding an existing man-dominated environment. When this occurs, competitive forces in the adapted communities would result in a redefinition of population equilibrium.

Fragmentation and loss of forested habitat may impact wildlife in the area by reducing potential nesting and foraging areas, as well as displacing animal populations.

4.5.2.3 Aquatic Communities and Wildlife Impacts

Aquatic organisms are very sensitive to the discharges and inputs resulting from construction activities. Impacts usually associated with in-stream construction include increased channelization and scouring of the streambed. In-stream construction alters the substrate and impacts adjacent streamside vegetation. Such disturbances within the substrate lead to increased siltation that can clog the gills and feeding mechanisms of benthic organisms, fish, and amphibian species. The populations of these organisms are slow to recover and may not do so once a stream has been severely impacted. The anticipated impacts of the detailed study alternatives on streams and wetlands in the study area are presented in Section 4.5.3.2.

Species listed in the NCDOT *Invasive Exotic Plants of North Carolina* (NCDOT 2008) will be identified and their presence noted, where applicable, during field investigations once a preferred alternative has been identified. Trucks and heavy equipment associated with project construction may introduce or transport seeds from terrestrial, non-native vegetation, resulting in colonization of existing or newly created vacant spaces with exotic vegetation. Impacts could occur during cut-and-fill operation and during temporary or permanent clearing within the limits of the proposed construction. The No-Build Alternative would not result in any invasive species impacts.

Appropriate measures will be taken to avoid spillage of construction materials and to control runoff. Such measures include an erosion and sedimentation control plan, provisions for disposal and handling of waste materials and storage, stormwater management measures, and appropriate road maintenance measures. NCDOT's *Best Management Practices for the Protection of Surface Waters* (NCDOT 1997) and Sedimentation Control guidelines will be enforced during the construction stages of the project. Long-term impacts to water resources may include permanent changes to the stream banks and temperature increases caused by the removal of streamside vegetation.

4.5.3 Water Resources Impacts

Primary sources of water quality degradation in urban and developed areas are non-point sources of discharge, which include surface water runoff and runoff from construction activities. Short-term impacts to water quality from construction-related activities include increased sedimentation and turbidity in nearby water resources. Long-term impacts include substrate destabilization, bank erosion, increased turbidity, altered flow rates, and possible temperature fluctuations within the channel due to removal of streamside vegetation.

The removal of streamside vegetation and placement of fill material during construction contributes to erosion and possible sedimentation. Erosion and sedimentation may carry soils, toxic compounds, trash, and other materials into the aquatic communities at the construction site. As a result, sand bars may be formed both at the site and downstream. Increased light penetration from the removal of streamside vegetation may also increase water temperatures. Warmer water contains less oxygen, thus reducing aquatic life that depends on high oxygen concentrations. Quick revegetation of these areas helps to reduce the impacts by supporting the underlying soils. In accordance with the North Carolina Sedimentation Pollution Control Act of 1973 (General Statutes Chapter 113A, Article 4), as amended,

and 15A North Carolina Administrative Code (NCAC) Chapter 4 (Sedimentation Control), an erosion and sedimentation control plan must be prepared for land-disturbing activities that cover one or more acres to protect runoff from a 10-year storm.

The proposed project would impact surface waters, wetlands, and ponds, as described in the following sections. Construction activities associated with the project will strictly follow NCDOT's *Best Management Practices for Construction and Maintenance Activities* (NCDOT 2003b) and *Best Management Practices for the Protection of Surface Waters* (NCDOT 1997). Sedimentation control guidelines will be strictly enforced during the construction stages of the project.

4.5.3.1 Groundwater Impacts

Expected effects of the project on groundwater are similar among the detailed study alternatives. Any wells within the project's right-of-way will be surveyed prior to project construction. NCDOT will purchase these wells and cap and abandon them in accordance with 15A NCAC 2C.0100, Well Construction Standards. Any subsurface contamination will be reported to the Wilmington Regional Office of the NCDEQ. During the final design phase of the project, NCDOT will also identify wells adjacent to the project right-of-way that could be impacted by roadway construction. Mitigation for these wells could be provided through land purchase, compensation for damages, or the provision of new wells.

A roadway alignment is in a cut section if the elevation of the roadway is below the original ground elevation. Well drawdown (reduced yield) may occur around areas of cut sections. Construction of the detailed study alternatives would contribute to a cumulative decrease in available recharge area for the Castle Hayne and Peedee aquifers. However, due to the already urban/disturbed land areas in the vicinity, the proposed project is not expected to substantially impact aquifer recharge volumes.

Pollutants associated with highway construction and use could potentially affect aquifer groundwater quality in localized areas. Possible pollutants include pesticides, herbicides, fertilizers, petrochemicals, oil, grease, heavy metals, and hazardous materials. Note that no sole or principal drinking water aquifers are present in the project area (EPA 2007). Construction impacts are presented in Section 4.13.

Two utilities supply the majority of drinking water to New Hanover County and Brunswick County residents within the project study area: Cape Fear Public Utility Authority and Brunswick Regional Water and Sewer. Impacts to these drinking water suppliers are not anticipated.

4.5.3.2 Surface Water Impacts

Stream Impacts

Permanent impacts to jurisdictional streams for each detailed study alternative are summarized in Table 4-17 and shown on Figure 4-25 through Figure 4-36. Impact numbers for each stream segment and alternative are shown in Table 4-18. Jurisdictional stream impacts were calculated based on the North Carolina Division of Water Resources (NCDWR) stream model. The linear feet shown in Table 4-17 and Table 4-18 do not include areas where bridges would be placed over larger stream systems. The bridged areas have been removed from the analysis. The No-Build Alternative would have no impact to

jurisdictional streams. The impacts the alternatives would have on jurisdictional streams have been quantified to the nearest linear foot using the functional design construction slope stake limits plus 40 feet.

Table 4-17: Jurisdictional Stream Impacts

	Alternative					
	B	M Avoidance	N Avoidance	Q	T	V-AW
Total Stream Crossings (#)	8	22	17	14	8	11
Total Stream Length (feet)	2,528	8,779	5,806	4,962	1,667	2,075

Note: Impacts were calculated using the functional design construction slope stake limits plus 40 feet.

Table 4-18: Impacted Streams

Stream ID	Stream Name	Best Usage Classification	Alternative	Stream Impact (linear feet)
Alligator Creek	Alligator Creek	SC	V-AW	534
Bishop Branch	Bishop Branch	C;Sw	MA, NA	321
Brunswick River	Brunswick River	SC	V-AW	216
Goodland Branch	Goodland Branch	C;Sw	MA, NA	373
Greenfield Creek	Greenfield Creek	SC	V-AW	55
Jackeys Creek	Jackeys Creek	C;Sw	B, Q, T, V-AW	B: 138; Q: 136, T: 135; V-AW: 154
Little Mallory Creek	Little Mallory Creek	C;Sw	MA, NA	255
Mallory Creek	Mallory Creek	SC	B, MA, NA, Q, T	B: 302; MA: 236; NA: 237; Q: 297; T: 301
Morgan Branch	Morgan Branch	C;Sw	Q, T, V-AW	Q, T: 250; V-AW: 372
Piney Branch	Piney Branch	C;Sw	B, Q, T	B, Q: 479; T: 462
5SA	UT to Barnards Creek	C;Sw	MA, Q	605
5SB	UT to Barnards Creek	C;Sw	MA, Q	316
5SF	UT to Barnards Creek	C;Sw	MA, Q	938
5SG	UT to Barnards Creek	C;Sw	MA, Q	1,210
5SZ	UT to Barnards Creek	C;Sw	MA, Q	105
10SB	UT to Bishop Branch	C;Sw	MA, NA	703

Table 4-18: Impacted Streams

Stream ID	Stream Name	Best Usage Classification	Alternative	Stream Impact (linear feet)
10SF	UT to Bishop Branch	C;Sw	MA, NA	222
8SA	UT to Brunswick River	SC	V-AW	490
20SC	UT to Goodland Branch	C;Sw	MA, NA	415
20SD	UT to Goodland Branch	C;Sw	MA, NA	214
20SE	UT to Goodland Branch	C;Sw	MA, NA	513
20SF	UT to Goodland Branch	C;Sw	MA, NA	333
13SA	UT to Greenfield Lake	C;Sw	B, NA, T	202
26SC	UT to Greenfield Lake	SC	V-AW	56
7SB	UT to Jackeys Creek	C;Sw	V-AW	41
1SB	UT to Jackeys Creek	C;Sw	B	55
3SB	UT to Mallory Creek	C;Sw	B, Q	301
10SA	UT to Morgan Branch	C;Sw	Q, T, V-AW	33
10SG	UT to Morgan Branch	C;Sw	MA, NA	440
10SH	UT to Morgan Branch	C;Sw	MA, NA	MA: 131; NA: 129
10SO	UT to Morgan Branch	C;Sw	MA, NA	281
2SC	UT to Piney Branch	SC	B	1,011
5XSA	UT to Piney Branch	SC	B, Q, T	40
29XSB	UT to Sturgeon Creek	C;Sw	V-AW	51
10SE	UT to Town Creek	C;Sw	MA, NA	208
20SA	UT to Town Creek	C;Sw	MA, NA	565
20SY	UT to Town Creek	C;Sw	MA, NA	393
21XSC	UT to Town Creek	C;Sw	Q, T	Q: 251; T: 244

Note: Impacts were calculated using the functional design construction slope stake limits plus 40 feet.

MA = Alternative M Avoidance, NA = Alternative N Avoidance, UT = Unnamed Tributary

Pond Impacts

Permanent impacts to jurisdictional ponds for each detailed study alternative are summarized in Table 4-19 and shown on Figure 4-25 through Figure 4-36. The No-Build Alternative would have no impact on ponds. The acreage of impacts each alternative would have on ponds has been quantified using the functional design construction slope stake limits plus 40 feet.

Table 4-19: Jurisdictional Pond Impacts

Pond ID	Alternative					
	B	M Avoidance	N Avoidance	Q	T	V-AW
Pond Impacts (acres)	0.05	0.00	0.00	0.04	0.04	0.05

Note: Impacts were calculated using the functional design construction slope stake limits plus 40 feet.

Wetland Impacts

Permanent impacts to jurisdictional wetlands for each detailed study alternative are summarized in Table 4-20 and shown on Figure 4-25 through Figure 4-36. The acreages shown do not include areas where bridges would be placed over larger wetland systems. The bridged areas have been removed from the analysis. The No-Build Alternative would have no impact on wetlands. CAMA AECs were identified in the project study area in the form of public trust waters, estuarine waters, and coastal wetlands. Impacts to CAMA AECs are summarized in Table 4-20.

Table 4-20: Jurisdictional Wetland Impacts

	Alternative					
	B	M Avoidance	N Avoidance	Q	T	V-AW
Riparian Wetlands (acres)	16.1	26.3	21.8	20.3	13.5	35.4
Non-Riparian Wetlands (acres)	82.4	37.9	37.0	25.4	26.2	104.8
TOTAL (acres)	98.5	64.2	58.8	45.7	39.7	140.2
CAMA AECs	1.8	2.3	2.3	1.8	1.8	89.1

Note: Impacts were calculated using the functional design construction slope stake limits plus 40 feet.

4.5.4 Jurisdictional Issues

4.5.4.1 Waters of the United States

Avoidance and Minimization of Impacts

During development of the detailed study alternatives, efforts were made to avoid and minimize impacts to wetlands and streams wherever practicable.

Because of the number of streams and wetlands present in the project study area, total avoidance of surface waters is not practicable. Alternative alignments were developed in an effort to minimize impacts to streams and wetlands. The NEPA/Section 404 Merger Team concurred on May 30, 2017, at CP Meeting 2A on the streams that should be bridged by the alternatives. NCDOT will continue to

attempt to avoid and minimize impacts to streams and wetlands to the greatest extent practicable in identifying the preferred alternative and during project final design.

Compensatory Mitigation of Impacts

The purpose of compensatory mitigation is to replace the lost functions and values from a project's impacts to Waters of the United States, including wetlands and streams.

NCDOT will investigate potential on-site stream and wetland mitigation opportunities once the preferred alternative has been selected. On-site mitigation will be used as much as possible. Off-site mitigation needed to satisfy the federal CWA requirements for this project will be provided by the NCDEQ Division of Mitigation Services in accordance with applicable In-Lieu Fee mitigation programs.

Buffer Impacts

North Carolina River Basin Buffer Rules do not apply to streams potentially impacted by the detailed study alternatives.

4.5.4.2 Protected Species

As discussed in Section 3.5.4.2, as of April 25, 2018 (Brunswick County) and June 27, 2018 (New Hanover County), the USFWS lists 16 federally protected species for Brunswick County and 17 federally protected species for New Hanover County. Following are the biological conclusions rendered for each species based on survey results in the project study area; species' habitat descriptions are found in Section 3.5.4.2. Table 4-21 summarizes the federally protected species listed for Brunswick and New Hanover counties and the biological conclusion for the project's likely effect on each species. Species with biological conclusions of May Affect-Not Likely to Adversely Affect (MA-NLAA) will be coordinated with USFWS to determine whether formal consultation will be required per Section 7 of the ESA of 1973, as amended (16 U.S.C. 1531 et seq.).

Table 4-21: Federally Protected Species Effects

Scientific Name	Common Name	Federal Status ^a	County	Biological Conclusion
<i>Acipenser oxyrinchus oxyrinchus</i>	Atlantic Sturgeon	E	Brunswick and New Hanover	MA-NLAA
<i>Acipenser brevirostrum</i>	Shortnose sturgeon	E	Brunswick and New Hanover	MA-NLAA
<i>Alligator mississippiensis</i>	American alligator	T(S/A)	Brunswick and New Hanover	Not Required
<i>Calidris canutus rufa</i>	Rufa red knot	T	Brunswick and New Hanover	No Effect
<i>Caretta</i>	Loggerhead sea turtle	T	Brunswick and New Hanover	MA-NLAA

Table 4-21: Federally Protected Species Effects

Scientific Name	Common Name	Federal Status ^a	County	Biological Conclusion
<i>Charadrius melodus</i>	Piping plover	T	Brunswick and New Hanover	No Effect
<i>Chelonia mydas</i>	Green sea turtle	T	Brunswick and New Hanover	MA-NLAA
<i>Dermochelys coriacea</i>	Leatherback sea turtle	E	Brunswick and New Hanover	No Effect
<i>Eretmochelys imbricata</i>	Hawksbill sea turtle	E	Brunswick and New Hanover	No Effect
<i>Lepidochelys kempii</i>	Kemp's ridley sea turtle	E	Brunswick and New Hanover	MA-NLAA
<i>Mycteria americana</i>	Wood stork	E	Brunswick	MA-NLAA
<i>Myotis septentrionalis</i>	Northern long-eared bat	T	New Hanover	MA-LAA
<i>Picoides borealis</i>	Red-cockaded woodpecker	E	Brunswick and New Hanover	MA-NLAA
<i>Trichechus manatus</i>	West Indian manatee	E	Brunswick and New Hanover	MA-NLAA
<i>Amaranthus pumilus</i>	Seabeach amaranth	T	Brunswick and New Hanover	No Effect
<i>Carex lutea</i>	Golden sedge	E	New Hanover	No Effect
<i>Lysimachia asperulaefolia</i>	Rough-leaved loosestrife	E	Brunswick and New Hanover	No Effect
<i>Thalictrum cooleyi</i>	Cooley's meadowrue	E	Brunswick and New Hanover	No Effect

Source: NCDOT (2017c).

MA-NLAA = May Affect-Not Likely to Adversely Affect

MA-LAA = May Affect-Likely to Adversely Affect

^a E = Endangered; T = Threatened; T(S/A) = Threatened due to similarity of appearance

Atlantic Sturgeon

Biological Conclusion: May Affect, Not Likely to Adversely Affect

Suitable habitat for Atlantic sturgeon consisting of estuarine and riverine habitat of large river systems exists in the study area in the Cape Fear River, Brunswick River, and Alligator Creek. Atlantic sturgeon is an anadromous species, and these waters are listed as AFSA waters by the NCDMF and NCWRC.

Additionally, a query of the North Carolina National Heritage Program (NCNHP) Data Explorer on August 14, 2017, indicates an occurrence of Atlantic Sturgeon in the project study area. Atlantic sturgeon was last observed in the study area in 2012.

Shortnose Sturgeon

Biological Conclusion: May Affect, Not Likely to Adversely Affect

Suitable habitat for shortnose sturgeon consisting of estuarine and riverine habitat of large river systems exists in the study area in the Cape Fear River, Brunswick River, and Alligator Creek. Shortnose sturgeon is an anadromous species, and these waters are listed as AFSA waters by the NCDMF and NCWRC. Additionally, a query of the NCNHP Data Explorer on August 14, 2017, indicates an occurrence of shortnose sturgeon in the project study area. Shortnose sturgeon was last observed in the study area in 1993.

American Alligator

Biological Conclusion: Not Required

Species listed as threatened due to similarity of appearance with another listed species do not require Section 7 consultation with the USFWS. However, suitable habitat is present for American alligator in the project study area in the form of large streams, ponds, rivers, and swamps. A query of the NCNHP Data Explorer on August 14, 2017, indicates a known occurrence within the project study area in the vicinity of Eagle Island. Alligators were also observed in Greenfield Lake and in numerous residential and stormwater ponds during field investigations in 2014 and 2015.

Rufa Red Knot

Biological Conclusion: No Effect

Suitable habitat for rufa red knot does not exist within the project study area. The project study area does not include ocean beach or other open sand habitats that provide suitable habitat for this species. A query of the NCNHP Data Explorer on August 14, 2017, indicates no known rufa red knot occurrence within 1.0 mile of the project study area.

Loggerhead Sea Turtle

Biological Conclusion: May Affect, Not Likely to Adversely Affect

Suitable habitat for loggerhead sea turtle consisting of near shore creeks and large rivers is present in the project study area. A query of the NCNHP Data Explorer on August 14, 2017, indicates no known occurrences within 1.0 mile of the project study area. Loggerhead sea turtles have been observed by NCWRC in the Cape Fear River between Southport and Wilmington. Any construction activities performed within areas of suitable habitat will adhere to NMFS *Sea Turtle and Smalltooth Sawfish Construction Conditions* (NOAA 2006).

Piping Plover

Biological Conclusion: No Effect

Suitable habitat for piping plover does not exist in the project study area. A query of the NCNHP Data Explorer on August 14, 2017, indicates no known occurrences within 1.0 mile of the project study area.

Green Sea Turtle

Biological Conclusion: May Affect, Not Likely to Adversely Affect

Suitable habitat for green sea turtle is not prevalent in the project study area. Waters within the project study area are freshwater or brackish and do not contain marine grasses. A query of the NCNHP Data Explorer on August 14, 2017, indicates no known occurrences within 1.0 mile of the project study area. Green sea turtles have been observed by the NCWRC in the Cape Fear River between Southport and Wilmington. Any construction activities performed within areas of suitable habitat will adhere to NMFS *Sea Turtle and Smalltooth Sawfish Construction Conditions* (NOAA 2006).

Leatherback Sea Turtle

Biological Conclusion: No Effect

Suitable habitat for leatherback sea turtle does not exist in the project study area. A query of the NCNHP Data Explorer on August 14, 2017, indicates no known occurrences within 1.0 mile of the project study area.

Hawksbill Sea Turtle

Biological Conclusion: No Effect

Suitable habitat for hawksbill sea turtle is not present in the project study area. A query of the NCNHP Data Explorer on August 14, 2017, indicates no known occurrences within 1.0 mile of the project study area.

Kemp's Ridley Sea Turtle

Biological Conclusion: May Affect, Not Likely to Adversely Affect

Suitable habitat for Kemp's ridley sea turtle is not prevalent in the project study area. A query of the NCNHP Data Explorer on August 14, 2017, indicates no known occurrences within 1.0 mile of the project study area. Kemp's ridley sea turtles have been observed by NCWRC in the Cape Fear River between Southport and Wilmington. Any construction activities performed within areas of suitable habitat will adhere to NMFS *Sea Turtle and Smalltooth Sawfish Construction Conditions* (NOAA 2006).

Wood Stork

Biological Conclusion: May Affect, Not Likely to Adversely Affect

Suitable habitat for wood stork is present in the project study area in the form of tidal creeks, tidal marsh, and freshwater swamps. A query of the NCNHP Data Explorer on August 14, 2017, indicates no known occurrence of wood stork within 1.0 mile of the project study area.

Northern Long-Eared Bat

Biological Conclusion: May Affect, Likely to Adversely Affect

The USFWS developed a programmatic biological opinion (PBO) in conjunction with the FHWA, USACE, and NCDOT for the NLEB (*Myotis septentrionalis*) in eastern North Carolina. The PBO covers the entire NCDOT program in Divisions 1-8, including all NCDOT projects and activities. The programmatic determination for NLEB for the NCDOT program is “May Affect, Likely to Adversely Affect.” The PBO provides incidental take coverage for NLEB and would ensure compliance with Section 7 of the ESA for five years for all NCDOT projects with a federal nexus in Divisions 1-8, which includes New Hanover and Brunswick counties. This level of incidental take is authorized from the effective date of a final listing determination through April 30, 2020.

Red-cockaded Woodpecker

Biological Conclusion: May Affect, Not Likely to Adversely Affect

Suitable RCW foraging and nesting/roosting habitat in the form of open, mature stands of longleaf pine is present throughout the project study area. A query of the NCNHP Data Explorer on August 14, 2017, indicates two historic and one current element occurrence of RCW within 1.0 mile of the project study area. Ground and aerial surveys were conducted by Dr. J.H. Carter III & Associates on behalf of NCDOT in March 2014 (NCDOT 2015f). One previously active RCW cluster, identified as Brunswick Cluster 1 (BRU1), was located within 1.0 mile of the project study area. A foraging habitat analysis completed in September 2018 found that no RCW cavity trees would be removed or impacted by the proposed project (NCDOT 2018d).

West Indian Manatee

Biological Conclusion: May Affect, Not Likely to Adversely Affect

Suitable habitat for West Indian manatee consisting of large streams, sluggish rivers, and estuarine habitats exists in the project study area. A query of the NCNHP Data Explorer on August 14, 2017, indicates one known occurrence within 1.0 mile of the project study area. The Cape Fear population, located in the lower portions of the Cape Fear and Northeast Cape Fear rivers, was last observed in 2012. Construction activities will adhere to *Guidelines for Avoiding Impacts to the West Indian Manatee: Precautionary Measures for Construction Activities in North Carolina Waters* (USFWS 2003).

Seabeach Amaranth

Biological Conclusion: No Effect

Suitable habitat for seabeach amaranth, consisting of barrier island beaches where its primary habitat consists of overwash flats at accreting ends of islands, lower foredunes, and upper strands of noneroding beaches (landward of the wrack line), does not exist in the project study area. A query of the NCNHP Data Explorer on August 14, 2017, indicates no occurrences within 1.0 mile of the project study area.

Golden Sedge

Biological Conclusion: No Effect

Suitable habitat for golden sedge consisting of roadside and drainage ditches or power line rights-of-way where mowing and/or very wet conditions suppress woody plants is present in the project study area. Biologists from CAYLX conducted surveys of the study area on June 10-12, 2015. No individuals of golden sedge were found. A query of the NCNHP Data Explorer on August 14, 2017, indicates no occurrences within 1.0 mile of the project study area.

Rough-leaved Loosestrife

Biological Conclusion: No Effect

Suitable habitat for rough-leaved loosestrife consisting of ecotones or edges between longleaf pine uplands and pond pine pocosins, roadside depressions, maintained power and utility line rights-of-way, firebreaks, and trails exists in the project study area. Biologists from CAYLX conducted surveys of the study area on June 10-12, 2015. No individuals of rough-leaved loosestrife were found. A query of the NCNHP Data Explorer on August 14, 2017, indicates one occurrence within 1.0 mile of the project study area. This occurrence was last observed in 2003.

Cooley's Meadowrue

Biological Conclusion: No Effect

Suitable habitat for Cooley's meadowrue consisting of plowed firebreaks, roadside ditches and rights-of-way, and power line easements exists in the project study area. Additionally, soils that are loamy fine sand, sandy loam, or fine sandy loam; at least seasonally moist or saturated, including Foreston, Muckalee, Torhunta, and Woodington soil series, are common in the project study area. Biologists from CAYLX conducted surveys of the study area on June 10-12, 2015. No individuals of Cooley's meadowrue were found. Additionally, a query of the NCNHP Data Explorer on August 14, 2017, indicates no occurrences within 1.0 mile of the project study area.

4.5.4.3 Bald and Golden Eagle Protection Act

As discussed in Section 3.5.4.3, potential foraging habitat for bald eagle exists in the project study area and the area within a 1.13-mile radius (1.0 mile plus 660 feet) of the project study area boundary. The

Cape Fear River, Brunswick River, and Alligator Creek, as well as their surrounding marshes, are sufficiently open enough to be considered potential feeding sources. However, there were no observations of individual eagles or their nests in the project study area or within 660 feet of the study area boundary during field work activities in 2014, 2015, or 2016. The project is not expected to impact the bald eagle.

4.5.4.4 Essential Fish Habitat

The project includes the construction of a new bridge structure over identified EFH waters (Cape Fear and Brunswick rivers), which would require footings to be placed within designated EFH. The bridge structures for each alternative have not yet been designed, but it is likely that each new bridge would have bents installed in coastal marshes and streambeds. Best management practices (BMPs) for the protection of surface waters will be implemented and strictly adhered to, although it is not anticipated that any impacts would occur other than those from the piles themselves. If an alternative is chosen that results in fill impacts to coastal marsh, NCDOT would provide compensatory mitigation for such impacts. No substantial impacts to EFH are anticipated.

4.5.4.5 Areas of Environmental Concern

As discussed in Section 3.5.4.5, CAMA AECs were identified in the project study area. A CAMA permit from the North Carolina Division of Coastal Management (NCDCM) would be required for all impacts to designated CAMA AECs within the project study area. As noted in Table 4-20, all alternatives would impact CAMA AECs, which are located east of NC 133 and on Eagle Island.

4.5.4.6 Anadromous Fish Habitat

As discussed in Section 3.5.4.6, designated AFSAs and PNAs are present in the project study area. Per NCWRC and NCDMF, an in-water construction moratorium will be in effect from February 1 through June 30 for these waters.

4.6 Section 6(f) and Section 4(f) Impacts

In this section, resources subject to Section 6(f) and Section 4(f) are identified and shown on Figure 4-37 through Figure 4-48, potential uses of those resources are discussed, avoidance alternatives and other measures to minimize harm to the resources are assessed, and coordination with the public official having jurisdiction over each resource is documented.

4.6.1 Section 6(f) Resources

Section 6(f) of the LWCF Act of 1965 (16 U.S.C. 4601-4 et seq.) states that parks developed or improved using LWCF grant funds cannot be acquired unless no other reasonable and feasible alternative exists, and requires coordination with the National Park Service (NPS).

As identified in Table 3-4, resources within the project study area subject to Section 6(f) include Greenfield Lake Park, Dram Tree Park, and Legion Sports Complex. Alternative V-AW would impact areas of Greenfield Lake Park and Legion Sports Complex along US 421; however, the use of the property

would not be impacted. The proposed right-of-way for Alternative V-AW would extend into the property boundary of both resources and would impact existing sidewalk.

4.6.2 Section 4(f) Resources

Section 4(f) of the US Department of Transportation Act of 1966 provides protection for publicly owned parks, recreation areas, and wildlife and waterfowl refuges as well as significant historic sites. Historic sites protected by this regulation include sites that are eligible for listing or listed on the NHRP.

Two types of Section 4(f) resources would be affected by this project: historic sites and public parks/recreation areas. Table 4-22 lists the resources located within the project study area that are protected under Section 4(f).

Following completion of the DEIS and the selection of the preferred alternative, a Phase I field survey will be conducted to identify the presence/absence of archaeological sites within the limits of the preferred alternative and to determine which, if any, resources are identified as eligible for listing on the NRHP. If right-of-way impacts to archaeological resources are present, those resources will also be subject to Section 4(f).

Table 4-22: Section 4(f) Applicability Evaluation

Resource	Section 4(f) Applicable
USS North Carolina	No
Wilmington Historic District	Yes
Lake Forest Defense Housing	No
Sunset Park Historic District	Yes
Hanover Heights Historic District	Yes
Wilmington National Guard Armory	Yes
Lippitt House/Clarendon House	No
Goodman House	No
Jacob and Sarah Horowitz House	Yes
Sunset Park School	Yes
Greenfield Lake Park ^a	Yes
Dram Tree Park	No
Optimist Park	Yes
Legion Sports Complex ^a	Yes
E.P. Godwin Stadium	Yes

^a Greenfield Lake Park and Legion Sports Complex are also Section 6(f) resources.

4.6.2.1 Incorporation of Property

A summary of the property that would be incorporated by the project due to right-of-way and/or easement impacts is provided in Table 4-23.

As part of the Section 106 coordination, FHWA intends to use State HPO's concurrence as a basis for a *de minimis* finding for impacts to the Hanover Heights Historic District (Alternatives B, N Avoidance, and T), Wilmington National Guard Armory (Alternative V-AW), and the Sunset Park School. A *de minimis* finding is anticipated for Legion Sports Complex and Optimist Park (Alternative V-AW) due to the minor impacts proposed to the properties that would not affect their intended use.

Table 4-23: Use of Section 4(f)/6(f) Properties in Acres (Right-of-way/Easement)

Section 4(f) and Section 6(f) Impacts (acres)	Alternative (right-of-way/easement)					
	B	M Avoidance	N Avoidance	Q	T	V-AW
Wilmington Historic District	No use	No use	No use	No use	No use	4(f) Use (3.3/2.1)
Sunset Park Historic District	No use	No use	No use	No use	No use	4(f) Use (0.02/0.22)
Hanover Heights Historic District	<i>De Minimis</i> (<0.01/0.03)	No use	<i>De Minimis</i> (<0.01/0.03)	No use	<i>De Minimis</i> (<0.01/0.03)	No use
Wilmington National Guard Armory	No use	No use	No use	No use	No use	<i>De Minimis</i> (0.07/0.05)
Jacob and Sarah Horowitz House	No use	No use	No use	No use	No use	4(f) Use (0.0/0.07)
Sunset Park School	No use	No use	No use	No use	No use	<i>De Minimis</i> (0.03/0.03)
Greenfield Lake Park ^a	No use	No use	No use	No use	No use	<i>De Minimis</i> (0.7/0.3)
Legion Sports Complex ^a	No use	No use	No use	No use	No use	<i>De Minimis</i> (0.8/0.3)
Optimist Park	No use	No use	No use	No use	No use	<i>De Minimis</i> (1.7/0.0)
E.P. Godwin Stadium	<i>Temporary Occupancy</i> (0.0/<0.01)	No use	<i>Temporary Occupancy</i> (0.0/<0.01)	No use	<i>Temporary Occupancy</i> (0.0/<0.01)	No use

Note: FHWA anticipates de minimis findings and a final call will be made upon completion of public involvement and coordination with the local officials with jurisdiction over the relevant Section 4(f) resources.

Note: Impacts calculated using right-of-way and easement limits.

^a Greenfield Lake Park and Legion Sports Complex are also Section 6(f) resources.

4.6.2.2 Temporary Occupancy of Property

A temporary occupancy does not constitute a Section 4(f) use when all five conditions listed in 23 CFR § 774.13(d) are satisfied. Those conditions are that

- (1) Duration [of the occupancy] must be temporary, i.e., less than the time needed for construction of the project, and there should be no change in ownership of the land;
- (2) Scope of the work must be minor, i.e., both the nature and the magnitude of the changes to the Section 4(f) property are minimal;
- (3) There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis;
- (4) The land being used must be fully restored, i.e., the property must be returned

to a condition which is at least as good as that which existed prior to the project; and
(5) There must be documented agreement of the official(s) with jurisdiction over the Section 4(f) resource regarding the above conditions.

Alternatives B, N Avoidance, and T may temporarily impact E.P. Godwin Stadium due to easements along Shipyard Boulevard. Once a preferred alternative is identified, coordination with the officials with jurisdiction over the property will take place prior to FHWA's official determination regarding temporary occupancy to ensure that there is documented agreement of the conditions. Any future coordination regarding temporary occupancy will be included in the Final Environmental Impact Statement (FEIS).

4.6.2.3 Constructive Use of Property

Constructive use is determined by the criteria within 23 CFR 774.15. A constructive use of a Section 4(f) property is possible only in the absence of a permanent incorporation of land or a temporary occupancy of the type that constitutes a Section 4(f) use. "Constructive use occurs when the proximity impacts of a project on an adjacent or near-by Section 4(f) property, after incorporation of impact mitigation, are so severe that the activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired." Substantial impairment occurs when the protected activities, features, or attributes of the Section 4(f) property are substantially diminished. As a general matter, this means that the value of the resource, in terms of its Section 4(f) purpose and significance, will be meaningfully reduced or lost. It is not anticipated that there would be a constructive use of any Section 4(f) resource(s) as a result of the proposed project.

4.7 Avoidance Alternatives

Alternatives that completely avoid the use of section 4(f) resources or have been determined to have a *de minimis* impact to section 4(f) resources are not subject to a section 4(f) evaluation and approval if selected. Alternatives M Avoidance and Q would completely avoid use of Section 4(f) resources. Alternatives B, N Avoidance, and T has been determined to have a *de minimis* impact on the Hanover Heights Historic District; based on coordination with the State HPO and FHWA.

4.8 Section 4(f) Summary

One detailed study alternative would constitute a "use" of Section 4(f) resources as defined by 23 CFR 774.17. Alternative V-AW would require the use of three Section 4(f) resources, the Wilmington Historic District, Sunset Park Historic District, and the Jacob and Sarah Horowitz House. With the presence of detailed study alternatives that either avoid Section 4(f) resources or have been determined to have a *de minimis* impact, FHWA approval of the selection of this alternative is unlikely due to the Section 4(f) law as codified in 49 U.S.C. §303 and 23 U.S.C. §138. As discussed in Section 2.3.3, Alternative V-AW was retained as a detailed study alternative despite its use of resources protected by section 4(f) due to the possibility of additional design refinements to pursue a *de minimis* impact determination. However, it was later concluded that the impacts could not be avoided and remained adverse after additional design refinements. Following this conclusion and based on information on the other detailed study alternatives presented in this document, FHWA approval of Alternative V-AW remains unlikely. If it is

later determined that all other alternatives are neither feasible or prudent as defined by 23 CFR 774.17, and Alternative V-AW is identified as the selected alternative, an individual Section 4(f) evaluation and approval is required for the use of Section 4(f) properties required by the alternative.

4.9 Coordination

Written correspondence was exchanged and meetings will be held if necessary with officials with jurisdiction over the Section 4(f) resources identified. The correspondence and meetings are briefly summarized in this section. Complete correspondence, meeting summaries, and concurrence forms resulting from those meetings are included in Appendix A.

February 16, 2006: Memorandum from the HPO to NCTA recommending that any structure over 50 years of age within the project study area be evaluated.

February 21, 2006: Memorandum from the HPO to NCTA recommending that an archaeological survey be conducted across the project study area to identify and evaluate potentially significant sites, including underwater portions of the Cape Fear River, Big Mallory Creek, and Town Creek and its tributaries.

May 10, 2011: Historic resources consultation meeting was held between NCDOT and HPO to determine the project's area of potential effects (APE) and which resources should be further inventoried and assessed at an intensive level for inclusion in the historic architecture survey report.

May 6, 2015: Concurrence letter from HPO to NCDOT regarding NRHP eligibility of historic resources.

June 13, 2016: Concurrence letter from HPO to NCDOT regarding NRHP eligibility of historic resources.

May 24, 2017: Concurrence form for assessment of effects to historic resources signed by representatives from NCDOT, FHWA, and HPO.

February 12, 2019: Concurrence form for assessment of effects to historic resources signed by representatives from NCDOT, FHWA, and HPO.

4.10 Alternative Comparison Matrix

Estimated environmental impacts associated with the alternatives are provided in Table 4-24.

Table 4-24: Alternative Comparison Matrix

Resource	Alternatives					
	B	MA	NA	Q	T	V-AW
Project Features						
Length of Corridor (miles)	11.1	12.3	12.2	11.5	11.4	11.8
Construction Cost (millions \$)	743	808	770	776	719	508
ROW Cost (millions \$)	248	96	190	90	216	107
Number of Interchanges	5	4	4	4	4	6
Number of Railroad Crossings	2	1	2	1	2	2
Number of Major Power Easement Crossings	2	1	1	2	2	4
Socioeconomic Features						
Parks	1	0	1	0	1	3
Churches	3	4	4	3	3	3
Cemeteries	1	0	1	0	1	0
Schools	1	0	1	0	1	0
Fire Stations	0	1	0	1	0	0
Business Relocations	117	43	86	45	88	98
Residential Relocations	149	48	148	26	173	168
Total Relocations	266	91	234	71	261	266
Minority and/or Low-Income Populations Present	Yes	Yes	Yes	Yes	Yes	Yes
Physical Environment						
Potential Noise Impacts	526	390	396	433	453	276
Farmland soils (acres) ^c	454.0	553.6	469.7	416.7	346.5	151.7
Hazardous Materials Sites: High severity (#)	3	1	3	0	3	1
Hazardous Materials Sites: Low severity (#)	3	5	4	0	3	24
Floodplains – 100-year (acres) ^a	14.3	35.7	34.0	31.7	28.8	214.4
Floodplains – 500-year (acres) ^a	5.5	7.3	6.6	5.6	8.2	15.1

Table 4-24: Alternative Comparison Matrix

Resource	Alternatives					
	B	MA	NA	Q	T	V-AW
Floodway	2.8	2.1	2.1	2.6	2.6	0.4
Preservation Areas (acres)	29.46	31.02	30.46	21.92	21.36	139.76
Cultural Resources and 4(f)/6(f)						
Archaeological Probability ^a	250.7	481.1	370.3	380.8	273.0	318.0
Historic Properties – Section 106 adverse effect	0	0	0	0	0	3
Section 4(f) Anticipated Use	0	0	0	0	0	3
Section 4(f) Anticipated <i>De Minimis</i> Use	1	0	1	0	1	5
Section 6(f) Properties Impacted	0	0	0	0	0	2
Natural Environment						
Biotic Resources (acres)						
Coastal Plain Bottomland Hardwood - Blackwater Subtype	1.1	1.4	0.3	2.4	1.3	1.1
Coastal Plain Small Stream Swamp - Blackwater Subtype	6.7	17.0	10.1	8.8	0.5	6.8
Cutover	9.5	13.7	13.7	8.3	0.6	0.6
Cypress/Gum Swamp - Blackwater Subtype	12.1	21.7	21.7	12.1	6.5	0.0
Estuarine Woody Wetland	0.0	0.0	0.0	0.0	0.0	35.6
Maintained/Disturbed	210.3	282.3	272.6	226.9	230.0	281.0
Mesic Pine Flatwoods	102.5	239.1	200.3	145.9	111.0	39.4
Nonriverine Swamp Forest	0.1	2.2	2.2	0.0	0.0	0.0
Nonriverine Wet Hardwood Forest	11.8	5.7	5.6	8.6	13.5	21.9
Pine Plantation	145.8	47.5	41.0	101.4	87.9	0.7
Pocosin	49.1	1.6	1.6	6.2	6.4	0.6
Salt/Brackish Marsh	64.9	67.8	70.1	63.7	64.9	79.6
Small Depression Pocosin	0.1	0.6	0.4	0.2	0.2	0.0

Table 4-24: Alternative Comparison Matrix

Resource	Alternatives					
	B	MA	NA	Q	T	V-AW
Wet Pine Flatwoods	41.6	43.6	42.3	20.9	17.8	6.5
Xeric Sandhill Scrub	0.2	8.7	0.2	8.7	0.3	1.5
TOTAL	655.8	752.8	682.0	614.0	540.8	475.2
Forested Land (acres) ^b	371	380	325	306	245	113
Stream Crossings (#)	8	22	17	14	8	11
Streams (linear feet) ^b	2,528	8,779	5,806	4,962	1,667	2,075
Surface Waters/Ponds (acres) ^b	<0.1	0.0	0.0	<0.1	<0.1	<0.1
Wetlands (acres) ^b	98.5	64.2	58.8	45.7	39.7	140.2
CAMA Wetlands (acres) ^b	1.8	2.3	2.3	1.8	1.8	89.1
Federally-Protected Species Habitat Present	Yes	Yes	Yes	Yes	Yes	Yes

^a Impacts calculated using the 1,000-foot corridor limits.

^b Impacts calculated using slope stake limits plus a 40-foot buffer.

^c Farmland soils impacts include prime farmland, farmland of statewide importance, farmland of unique importance, and prime farmland if drained.

4.11 Required Permits and Actions

Through agency coordination, the following permits and actions have been identified as necessary for the proposed project.

4.11.1 Required Permits

4.11.1.1 North Carolina Division of Water Resources

Section 401 Certification. Any activity that may result in discharge to navigable waters and that requires a federal permit must obtain a certification that such discharge would be in compliance with applicable state water quality standards.

Authority. North Carolina General Statute 143, Article 215, Part 1. Regulations promulgated in 15A NCAC-2H and 2B.

Stormwater Certification. The National Pollutant Discharge Elimination System (NPDES) stormwater permit addresses stormwater discharges that impair water quality. NCDOT construction activities are covered under NCDOT's Phase I stormwater permit, which is administered through the Department's sediment and erosion control program. Specific requirements vary and are affected by the classifications of the water to which the project would drain. NCDOT was granted its current permit on March 18, 2005.

Authority. North Carolina General Statute 143, Article 215, Part 1. Regulations promulgated in 15A NCAC 2H.1000 and 2B.0200.

4.11.1.2 United States Army Corps of Engineers

Section 404 Permit. A Section 404 Permit from USACE is required for any activity in water or wetlands that would discharge dredged or fill materials into waters of the United States and adjacent wetlands. To obtain permit approval, impacts to wetlands must be mitigated through avoidance, minimization, and compensation measures in accordance with the “Memorandum of Agreement (MOA) between the Department of the Army and the Environmental Protection Agency: Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines” (DA and EPA 1990).

Authority. Federal Water Pollution Control Act Amendments of 1972 and Section 404 of the CWA of 1977. Regulations promulgated in 33 CFR 323.

Section 10 Permit. A Section 10 Permit is required for construction of structures such as piers and jetties and excavation and placement of fill material in or affecting navigable waterways, including the Brunswick and Cape Fear rivers.

Authority. Rivers and Harbors Act of 1899, Section 10.

4.11.1.3 Division of Coastal Management

CAMA Major Permit. A CAMA Major Permit from NCDQM would be required for all impacts to designated AECs within the project study area. CAMA AECs were identified in the study area in the form of public trust waters, estuarine waters, and coastal wetlands. It is anticipated a CAMA Major Permit will be required under this project.

4.11.1.4 United States Coast Guard

Section 9 Permit. A Section 9 Bridge Permit is the written approval of the location and plans of the bridge or causeway to be constructed or modified across a navigable waterway and would be required for any structures crossing the Cape Fear River. Bridge clearances are reviewed under this permit.

Authority. Rivers and Harbors Act of 1899, Section 9.

4.11.1.5 United States Fish and Wildlife Service

Section 404 and Section 10 Permit Review. The USFWS’ responsibilities include review of Section 404 and Section 10 permits to determine a project’s impact on public fish and wildlife resources. USFWS provides recommendations to USACE on how the proposed project could avoid or minimize impacts to existing fish and wildlife resources and their habitats, including wetlands.

Authority. Fish and Wildlife Coordination Act, as amended.

Section 7 Consultation. Consultation with USFWS is required for any project that may impact endangered or threatened plants and animals and their designated critical habitat. The proposed project is expected to have the potential to affect several federally protected species for which the biological conclusion is May Affect, Not Likely to Adversely Affect. A detailed discussion of each of these species can be found in Section 4.5.4.2.

Authority. ESA of 1973, Section 7.

4.11.2 Required Actions/Issues to be Resolved

The following lists the required actions and issues to be resolved prior to identification of a preferred alternative.

- **Historic architecture studies and Section 106 effects:** A memorandum of agreement (MOA) regarding project effects and mitigation measures will be prepared, as applicable.
- **Archaeological survey and Section 106 effects:** Additional investigations will be conducted for the preferred alternative and Section 106 effects will be evaluated. If necessary, an MOA will be prepared regarding project effects and mitigation measures.
- **Hazardous materials investigations:** Supplemental investigations will be conducted for the preferred alternative.
- **Coordination with USFWS and Section 7 consultation:** A request for concurrence with the biological conclusions will be submitted to USFWS after selection of the preferred alternative.
- **Environmental justice:** Coordination with affected populations/communities will continue throughout the project development process.
- **Agency coordination:** Coordination with resource agencies will be maintained throughout the entire project development process.

4.12 Indirect and Cumulative Effects

The indirect and cumulative effects associated with the Cape Fear Crossing project have been identified and assessed in several technical reports available under separate covers. These reports include the *Screening Indirect and Cumulative Effects (ICE) Study*, LUSA, and CIA.

Indirect and cumulative effects were assessed within the Future Land Use Study Area (FLUSA) by predicting changes in development types within defined probable development areas (PDA) as a result of the build and no-build scenarios. The development pressures and regulations, proposed future land use, infrastructure, and proximity to proposed economic centers were considered to determine the degree of impacts to notable features and waterways within each PDA with and without the project.

The Cape Fear Crossing is included in local transportation planning documents. As discussed in Section 4.2, the proposed project is mostly consistent with several of the local planning documents. The project is not associated with an explicit economic development purpose nor is it intended to serve a specific development.

The time horizon for indirect and cumulative effects is 2040. A summary of anticipated indirect and cumulative effects is provided in this section of the DEIS and further information can be found in the aforementioned technical reports.

4.12.1 Evaluation of Indirect Effects

Examination of the PDAs shows that the Cape Fear Crossing project may encourage growth targeted to highway users in certain areas and/or influence future growth within the FLUSA. However, local planners indicated that overall the developable areas of the FLUSA are likely to be developed with or without the project based on other contributing factors and growth trends. Federal, state, and local regulations provide protections from development to both the human and natural environments within the FLUSA. Indirect land use impacts to these resources should be limited by the regulations in place.

Qualitative analyses of the probable development patterns in the FLUSA suggest that change in land use resulting from the project and subsequent private and public development actions could lead to an increase in impervious surface and could potentially have an effect on future stormwater runoff and water quality in the watersheds within the project study area.

Adopted ordinances and regulations would help mitigate potential water quality effects due to increased impervious surface coverage and increased water runoff. The Town of Leland, City of Wilmington, Brunswick County, and New Hanover County each have floodplain protection ordinances that include standards for development in the floodway and floodway fringe. Other stormwater permitting programs exist within the FLUSA. The Towns of Leland and Navassa and the City of Wilmington are currently NPDES Phase II entities and require stormwater permits. Both Brunswick County and New Hanover County are CAMA designated counties, and require permits for development projects that impact coastal wetlands and other AECs.

Water quality concerns will be avoided and/or mitigated through compliance with regulations covering watershed protection, floodplain protection, stream and river buffers, and stormwater management. Six watersheds in the project study area are designated as targeted local watersheds by the North Carolina Division of Mitigation Services. Targeted local watersheds have a high need for improvement and a high

Direct Effects

Direct effects are caused by the action and occur at the same time and place. (40 CFR 1508.8)

Indirect Effects

Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems. (40 CFR 1508.8)

Cumulative Effects

Cumulative impact is the impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (40 CFR 1508.7)

potential to benefit from restoration efforts, many of which occur in the form of mitigation from NCDOT.

Direct natural environmental impacts by the project will be addressed by avoidance, minimization, and mitigation, consistent with programmatic agreements with environmental resource and regulatory agencies during the permitting processes. Future development will be required to follow federal, state, and local regulations for the protection of water quality.

4.12.2 Evaluation of Cumulative Effects

The cumulative effects analysis includes an assessment of past, current, and future projects that are reasonably foreseeable to determine potential cumulative effects. Table 4-24 provides a list and brief description of the major past, current, and future projects that have influenced or are likely to influence growth within the FLUSA.

Table 4-25: Potential Development Influencing Projects

Project	Description of Action
Past Projects	
Wilmington Bypass – Section A	Wilmington Bypass from US 17 to US 74/76 in Brunswick County.
Wilmington Bypass – Section B (R-2633)	Wilmington Bypass from US 74/76 to US 421 in Brunswick County.
Wilmington Bypass – Section C	Wilmington Bypass from US 421 to I-40 in Brunswick and New Hanover counties.
Randall Parkway Widening	Randall Parkway, widened to multi-lanes from Independence Boulevard/Covil Avenue to South College Road in Wilmington.
Village Road (SR 1472) Widening	Village Road, widened to multi-lanes from west of SR 1437 (Old Fayetteville Road) to east of US 17 interchange ramps with dual left turn lanes on north ramp to US 17 in Leland.
Market Street – Section A (U-4902)	Market Street, provided access management improvements from SR 1272 (New Centre Drive) to Martin Luther King, Jr. Parkway.
Brunswick Forest Subdivision and multi-use area	A portion of the commercial and residential area of the Brunswick Forest development has occurred between US 17, Town Creek, and NC 133 in Brunswick County.
Mallory Creek Development	A portion of the commercial and residential area of the Mallory Creek development has occurred along NC 133 in Brunswick County.
Commercial development along US 17	Large-scale retailers, general commercial strip development, and gas stations have developed along the US 17 corridor over the last 15 years. This has mostly occurred west of the US 74/76 interchange to Lanvale Road in Brunswick County.
USACE Navigational Channel dredging project	In 2004, the Cape Fear River navigational channel in the vicinity of the Port of Wilmington was dredged to 42 feet. This allowed larger vessels to call the Port.

Table 4-25: Potential Development Influencing Projects

Project	Description of Action
Current Projects	
Barclay West	A multi-use development with residential and commercial development immediately located near the intersection of Independence Boulevard and South 17th Street.
River Lights	Large-scale residential development along River Road, south of Wilmington.
Brunswick Forest Subdivision and multi-use area	A portion of the commercial and residential area of the Brunswick Forest development is currently being developed just south of US 17.
Commercial development along US 17	Large-scale retailers, general commercial strip development, and gas stations have developed along the US 17 corridor over the last 15 years. This has mostly occurred west of the US 74/76 interchange to Lanvale Road in Brunswick County.
Kerr Avenue (U-3338)	Widen to multi-lanes from Randall Parkway to US 74 (Martin Luther King, Jr. Parkway) in Wilmington.
Village Road (R-3601)	From US 17/US 74/76, NC 133/SR 1472 (Village Road) interchange to the US 421/NC 133 interchange, add additional lanes on north and southbound lanes and widen bridge No. 107 and bridge No. 108.
Future Projects	
Independence Boulevard Extension (U-4434)	Extend Independence Boulevard from Randall Parkway to US 74 (Martin Luther King, Jr. Parkway).
US 17 Business (U-5869)	US 17 Business, US 17 (South 17th Street) to Covil Avenue in Wilmington. Construct a road diet.
Market Street (U-4902)	Provide access management improvements along Market Street from Colonial Drive to SR 1402 (Porters Neck Road).
US 74, US 17/US 421 (U-5731)	Construct a fly-over and free flow ramp at interchange.
Eastwood Road/Military Cutoff Road (U-5710)	Convert at-grade intersection to an interchange.
Martin Luther King, Jr. Parkway/College Road (U-5792)	Convert at-grade intersection to an interchange.
Carolina Beach Road (U-5729)	Upgrade roadway from US 421 (Burnett Avenue) to US 117 (Shipyard Boulevard) in Wilmington.
South Front Street (U-5734)	Widen to multi-lanes from US 17 Business/US 76/US 421 (Cape Fear Memorial Bridge) to US 421 (Burnett Boulevard) in Wilmington.
Carolina Beach Road (U-5790)	Widen existing roadway from NC 132 (South College Road) to Sanders Road and construct flyovers at US 421 and NC 132.
College Road (U-5702)	Provide access management and travel time improvements from SR 2048 (Gordon Road) to US 421 (Carolina Beach Road).

Table 4-25: Potential Development Influencing Projects

Project	Description of Action
College Road (U-5704)	Provide access management and travel time improvements from Wilshire Boulevard to US 117 (Shipyard Boulevard). Includes the construction of a grade-separated interchange at US 76 (Oleander Drive).
Castle Hayne Road (U-5863)	Widen to multi-lanes from I-140/US 17 (Wilmington Bypass) to SR 1310 (Division Drive) in Wilmington.
Military Cutoff Road Extension (U-4751)	Multi-lanes on new location from SR 1409 (Military Road) to US 17 in Wilmington.
Gordon Road (U-3831)	Widen to multi-lanes from NC 132 interchange ramp to west of US 17 Business (Market Street) in Wilmington.
New Route (U-5871)	Construct two-lane road on new location from SR 2432 (Raleigh Street) to River Road in Wilmington.
Brunswick Forest Subdivision and multi-use area	A future portion of the residential area of the Brunswick Forest development is to be developed along Town Creek.
Mallory Creek Development	A portion of the commercial and residential area of the Mallory Creek development is proposed in between Wire Road and the current residential development of Mallory Creek along NC 133.
Port of Wilmington Expansion	The NCSPA has a proposed container yard improvement plan as well as a north-south transportation corridor internal to the Port.

This proposed project is expected to contribute to indirect and cumulative effects of future land use changes within the FLUSA. Travel time savings to varying degrees depending on alternative are also expected. Depending on the preferred alternative, it would also change property access and create new land use and transportation nodes to varying degrees.

Table 4-26: Summary of Notable Environmental Resources and Foreseeable Impacts

Notable Environmental Resources	Foreseeable Impacts
Historic and Cultural Resources	Direct and indirect impacts to historic resources are anticipated with all the alternatives. Direct impacts to the Wilmington Historic District and the Sunset Park Historic District resulting in an adverse effect would be anticipated due to Alternative V-AW. Direct impacts to the Wilmington National Guard Armory resulting in a “no adverse effect” would also be anticipated due to Alternative V-AW, as well as indirect effects due to noise or visual impacts to the USS North Carolina Battleship and Lake Forest Defense Housing. Direct impacts to Hanover Heights resulting in a “no adverse effect” would be anticipated due to Alternatives B, N Avoidance, and T.
Public Parks and Recreation Lands	Direct and indirect impacts to parks and recreational facilities are anticipated; however, impacts would not preclude the use of any of the parks or recreational facilities within the project study area.

Table 4-26: Summary of Notable Environmental Resources and Foreseeable Impacts

Notable Environmental Resources	Foreseeable Impacts
VADs	No direct impacts to VADs are anticipated; however, indirect impacts could occur within PDAs surrounding Alternatives M Avoidance and N Avoidance in Brunswick County.
CAMA AECs	All alternatives would directly impact CAMA AECs, as discussed in Section 4.5.3.2. Under CAMA regulations, any development within an AEC will require a CAMA permit. CAMA mitigation or minimization of impacts is expected.
Protected Lands	Direct impacts to protected lands identified in Section 4.3.9 are anticipated for all alternatives. Indirect and cumulative impacts due to induced growth could create pressure to develop neighboring parcels that are currently undeveloped or in open space active land uses. This would contribute to habitat fragmentation and impair water quality. Induced growth from Alternatives B, M Avoidance, N Avoidance, Q, and T is probable for the area near the Clarendon Plantation.
Environmental Justice	Indirect and cumulative effects may occur to Environmental Justice populations, including the Spring Hill community in Brunswick County and several neighborhoods in New Hanover County. Impacts due to all the alternatives may include gentrification, being priced out of the community due to increased development pressures, or the creation of a barrier effect. Additional discussion is included in Sections 4.1.3 and 4.1.4.
Primary [Fishery] Nursery Areas (PNA)	The entire lengths of the Cape Fear, Northeast Cape Fear, and Brunswick rivers within the project study area have been designated as PNAs, except for the dredged navigational channel. These areas represent critical areas for numerous species including finfish and crustaceans, which are of commercial and recreational importance. Indirect impacts due to all the alternatives would include induced growth and development would increase stormwater runoff and turbidity, which would negatively impact habitat.
Prime and Unique Farmland Soils	Direct impacts to prime and unique farmland soils are anticipated as a result of all the alternatives. Alternatives B, Q, T, and V-AW would not impact any active farms. Indirect and cumulative impacts due to all the alternatives would include induced growth from the project likely reducing active farmland within the project study area. Additional discussion regarding impacts is included in Section 4.3.1.1.
Targeted Local Watersheds	Direct natural environmental impacts by the project will be addressed by avoidance, minimization, and mitigation, consistent with programmatic agreements with environmental resource and regulatory agencies during the permitting processes. Future development would be required to follow federal, state, and local regulations for the protection of water quality. Indirect impacts by any of the alternatives would include increased surface water runoff from induced growth which could further contribute to the degradation of the targeted local watersheds.

Table 4-26: Summary of Notable Environmental Resources and Foreseeable Impacts

Notable Environmental Resources	Foreseeable Impacts
Water Quality	Wetlands are located throughout the project study area and are protected under Sections 401 and 404 of the CWA. Direct impacts to wetlands are anticipated with all alternatives. Induced development would eliminate wetlands, which may lead to a cumulative aggregate loss of wetlands.

4.13 Construction Impacts

Construction of any of the detailed study alternatives is expected to result in similar temporary impacts as described below. Since construction operations would be limited to the time needed to complete the project, both benefits and impacts to resources would be considered temporary. Utilization of NCDOT standards and specifications would ensure that these impacts are minimized to the maximum extent practicable.

During the construction phase of the proposed project a number of impacts are to be expected. Most of the impacts during construction are expected to be temporary in nature and may include the following:

- Minor short-term business impacts as a result of changes in access during construction.
- Minor short-term community impacts as a result of changes in access during construction.
- Temporary impacts to soils during construction (erosion, compaction, and discharges).
- Temporary impacts to water quality during construction (erosion, runoff, discharges to surface waters).
- Temporary impacts to aquatic resources and water quality during bridge construction (pier placement, mobility of equipment) that could result in a temporary increase in turbidity and a potential decrease in dissolved oxygen levels associated with the re-suspension of sediment particles into the water column.
- Temporary impacts to floodplains and floodways during bridge construction over the Cape Fear River and other water resources.
- Temporary impacts during construction to preservation areas.
- Temporary impacts to terrestrial communities during project construction (erosion, minor clearing, discharges).
- Temporary impacts to wildlife species during project construction in the form of dislocation of species occupying adjacent habitats during construction due to noise and activity in the vicinity of their usual habitat. It is likely that species dislocated during construction activities would return once construction is complete.
- Temporary impacts to jurisdictional waters of the United States and protected stream buffers during construction to include erosion, runoff, and discharges to floodplains, wetlands, and surface waters within and in the vicinity of the construction area. Construction of bridges along water resources could cause temporary impacts to their associated floodplains from general construction activity and pile placement.

- Temporary impacts to air quality during project construction (vehicle and equipment exhaust, dust, off-gassing of construction materials).
- Construction noise.

Detailed temporary impacts will be determined once a preferred alternative has been identified. Potential temporary impacts to population, demographics, housing, businesses, communities and community facilities, recreation areas, historic architectural resources, archaeological resources, soils, water quality, floodplains and floodways, preservation areas, terrestrial communities, wildlife species, aquatic resources, threatened and endangered species, EFH, jurisdictional waters of the United States, AEC, protected stream buffers, navigable waters, air quality, energy, utilities, and hazardous materials will all be assessed and calculated once a preferred alternative has been identified.

4.13.1 Energy

A substantial amount of energy would be required to construct any of the detailed study alternatives. However, the energy use would be temporary and should ultimately result in energy use reductions upon project completion, due to reduced congestion on US 17 and the Cape Fear Memorial Bridge and increased operational safety in the project study area. Because of congestion reductions and increased safety, construction of any of the detailed study alternatives is expected to result in less total energy utilization than the No-Build Alternative.

Executive Orders 13212 and 13302 require federal agencies to take actions to expedite projects that would increase the production, transmission, or conservation of energy, or that strengthen pipeline safety. The subject project is not energy-related; therefore, Executive Orders 13212 and 13302 do not apply.

4.13.2 Lighting

Because construction activities could occur 24 hours a day, construction areas could be lit to daylight conditions at night. This could create temporary impacts to nearby homes, businesses, and wildlife.

4.13.3 Visual

In general, visual quality would be enhanced or improved for those using the highway and degraded for those viewing the highway from surrounding communities. The proposed project would provide motorists opportunities for scenic views across agricultural fields, the Cape Fear River, and forested areas, which would be a positive effect. In the urban settings, visual impacts are still possible, but the project context is more in line with urban land uses and would likely be in context with the surrounding areas.

Additional lighting near the transportation nodes where there are interchanges could be noticeable in rural areas where it is currently absent. Context sensitive designs would be used in areas along the preferred alternative where visual/aesthetic impacts are likely.

Temporary visual impacts would affect properties adjacent to areas where construction, staging, and stockpiling operations occur. Upon project completion, the contractor would be required to remove all equipment and excess materials and reseed any disturbed areas.

4.13.4 Construction Noise

The predominant construction activities associated with this project are expected to be earth removal, hauling, grading, bridge/grade separation construction, and paving. Temporary and localized construction noise impacts will likely occur because of these activities. During daytime hours, the predicted effects of these impacts will be temporary speech interference for passers-by and those individuals living or working near the project. During evening and nighttime hours, steady-state construction noise emissions such as from paving operations will be audible and may cause impacts to activities such as sleep. Sporadic evening and nighttime construction equipment noise emissions such as from backup alarms, lift gate closures (“slamming” of dump truck gates), etc., will be perceived as distinctly louder than the steady-state acoustic environment, and will likely cause impacts to the general peace and usage of noise-sensitive areas.

Extremely loud construction noise activities such as use of pile-drivers and impact-hammers (jack hammer, hoe-ram) may provide sporadic, temporary, and significant construction noise impacts in the near vicinity of those activities. Construction activities that will produce extremely loud noises should be scheduled during times of the day when such noises will create as minimal disturbance as possible.

Generally, low-cost and easily implemented construction noise control measures should be incorporated into the project plans and specifications to the extent possible. These measures include, but are not limited to, work-hour limits, equipment exhaust muffler requirements, haul-road locations, elimination of “tail gate banging”, ambient-sensitive backup alarms, construction noise complaint mechanisms, and consistent and transparent community communication.

While discrete construction noise level prediction is difficult for a receiver or group of receivers, it can be assessed in a general capacity with respect to distance from known or likely project activities. For this project, earth removal, grading, hauling, paving, and pile-driving would be anticipated to occur near noise study areas. Although construction noise impact mitigation should not place an undue burden upon the financial cost of the project or the project construction schedule, pursuant to the requirements of 23 CFR 772.19, it is the recommendation of this traffic noise analysis that:

- Earth removal, grading, hauling, and paving activities near residences should be limited to weekday daytime hours.
- If meeting the project schedule requires that earth removal, grading, hauling and / or paving must occur during evening, nighttime and / or weekend hours near residential neighborhoods, the Contractor shall notify NCDOT as soon as possible. In such instance(s), all reasonable attempts shall be made to notify and to make appropriate arrangements for the mitigation of the predicted construction noise impacts upon the affected property owners and / or residents.

- If construction noise activities must occur during context-sensitive hours near noise-sensitive areas, discrete construction noise abatement measures including, but not limited to, portable noise barriers and / or other equipment-quieting devices shall be considered.
- Some construction activities will create extreme noise impacts for nearby noise-sensitive land uses. For example, pile driving activities can create noise impacts for distances of up to one-quarter mile. It is the recommendation of this traffic noise analysis that considerations be made for any nearby residences for all evening and/or nighttime periods (7:00 p.m. – 7:00 a.m.), and for all weekend hours throughout which extremely loud construction activities might occur.

4.13.5 Air

Air quality impacts resulting from roadway construction activities are typically not a concern when contractors utilize appropriate control measures. During construction of the proposed project, all materials resulting from clearing and grubbing, demolition or other operations would be removed from the project, burned or otherwise disposed of by the Contractor. Any burning would be done in accordance with applicable local laws and ordinances and regulations of the North Carolina State Implementation Plan (SIP) for air quality in compliance with 15A NCAC 2D.1903. Care would be taken to ensure burning will be done at the greatest distance practical from dwellings and not when atmospheric conditions are such as to create a hazard to the public. Operational agreements that reduce or redirect work or shift times to avoid community exposures can have positive benefits. Burning would be performed under constant surveillance.

During construction, measures would be taken to reduce the dust generated by construction, by wet suppression or equivalent, when the control of dust is necessary for the protection and comfort of motorists or area residents.

4.13.6 Utilities

Construction of the proposed project would require some adjustment, relocation, or modification to existing utilities. Any disruption to utility service during construction would be minimized by close coordination with utility providers and property owners in affected areas and phased adjustments to utilities.

4.13.7 Water Quality and Erosion Control

Erosion and sedimentation caused by construction activities could affect drainage patterns and water quality. Erosion and sedimentation during project construction would be controlled through the specification, installation, and maintenance of stringent erosion and sedimentation control methods. In accordance with the North Carolina Sedimentation Pollution Control Act (15A NCAC 4B.001-.0027), an erosion and sedimentation control plan would be prepared for the preferred alternative. The plan would follow guidelines established in the NCDEQ publication *Erosion and Sediment Control Planning and Design Manual* (NCDEQ 2013) and NCDOT's *Best Management Practices for the Protection of Surface Waters* (NCDOT 1997).

Impacts resulting from erosion and sedimentation will be kept to a minimum by employing BMPs such as revegetating or covering disturbed areas and using berms, dikes, silt barriers, and catch basins.

NCDOT has standard specifications that require proper handling and use of construction material. The contractor would be responsible for taking precautions during construction to prevent the pollution of water bodies. These precautions include, but are not limited to, the following:

- Pollutants such as chemicals, fuels, lubricants, raw sewage, bitumens, and other harmful wastes shall not be discharged into any body of water.
- Contractors may not ride or drive mechanical equipment across streams unless construction is required in the streambed.
- Excavated materials must be stored and disposed of in a way that prevents erosion of the material into surface waters. If material storage in these areas cannot be avoided, BMPs must be implemented to avoid runoff.

4.13.8 Geodetic Markers

The proposed project could impact geodetic survey markers. The North Carolina Geodetic Survey would be contacted prior to construction in order to allow resetting of monuments that would be affected. Intentional destruction of a geodetic monument is a violation of North Carolina General Statute 102-4.

4.13.9 Borrow and Disposal Sites

Construction of the roadway and bridges may require excavation of unsuitable material and placement of embankments. Specific locations of borrow and disposal sites would be determined during the final design phase of the project.

Following award of the construction contract, the contractor would be responsible for obtaining necessary permits resulting from borrow and waste activities that impact waters of the United States. Construction waste material generated during clearing, grubbing, and other construction phases would be disposed of by the contractor, either on-site in retention areas or off-site, in accordance with state and local regulations. Prior to approval by NCDOT of any proposed borrow source and the removal of any material, the contractor would be required to provide certification from the HPO that the removal of the borrow material would have no effect on any property eligible for or listed on the NRHP. Borrow material from sources in any area under the jurisdiction of USACE and the placement of waste materials in wetlands or streams would not be allowed unless NCDOT has obtained a permit for those activities from the appropriate regulatory agencies.

4.13.10 Traffic Maintenance and Detour Accessibility

Detours and road closures may be required in locations where the proposed project utilizes or crosses existing roadways. Maintenance of traffic and construction sequencing would be planned and scheduled to minimize traffic delays within the project limits. Temporary lane closures and detours may be required at times during construction. A traffic control plan would be prepared during the final design phase of the project, which would detail impacts to existing traffic patterns and road closures or

realignments. The plan would also define detour routes, designated truck routes, and parking areas for construction equipment. Signs would be used where appropriate to provide notice of road closures and other pertinent information to the traveling public. Access to businesses and residences would be maintained to the extent practical during construction.

4.13.11 Bridge Demolition

None of the detailed study alternatives would remove existing bridges. It is not expected that any materials from existing structures would be dropped into waters of the United States during project construction.

4.14 Irretrievable and Irreversible Commitment of Resources

Implementation of any of the detailed study alternatives would involve a commitment of a range of natural, physical, human, and fiscal resources. Land used for the construction of the proposed project is considered an irreversible commitment during the time period that the land is used for a highway facility. However, if a greater need arises for the use of the land or if the highway facility is no longer needed, the land can be converted to another use. At present, there is no reason to believe such a conversion would be necessary or desirable.

Considerable amounts of fossil fuels, labor, and highway construction materials such as concrete, aggregate, and bituminous material would be expended to build the proposed project. Additionally, large amounts of labor and natural resources would be used in the fabrication and preparation of construction materials. These materials are generally not retrievable. However, they are not in short supply and their use would not have an adverse effect upon continued availability of these resources. Any construction also would require a substantial one-time expenditure of state and potentially federal funds, which are not retrievable.

The commitment of these resources is based on the concept that residents in the immediate area, region, and state would benefit from the improved quality of the transportation system.

4.15 Relationship Between Long-Term and Short-Term Uses/Benefits

The most disruptive short-term impacts associated with the proposed project would occur during land acquisition and project construction. However, the short-term uses of human, physical, economic, cultural, and natural resources would contribute to the long-term productivity of the project study area.

Existing homes and businesses within the preferred alternative's right-of-way would be displaced. However, adequate replacement housing, land, and space are available for homeowners and business owners to relocate within the project study area.

The project is consistent with the objectives of state and local transportation plans. It is anticipated that the proposed project would enhance long-term access and connectivity opportunities in Brunswick

County and New Hanover County and would support local, regional, and statewide commitments to transportation improvement and economic viability.

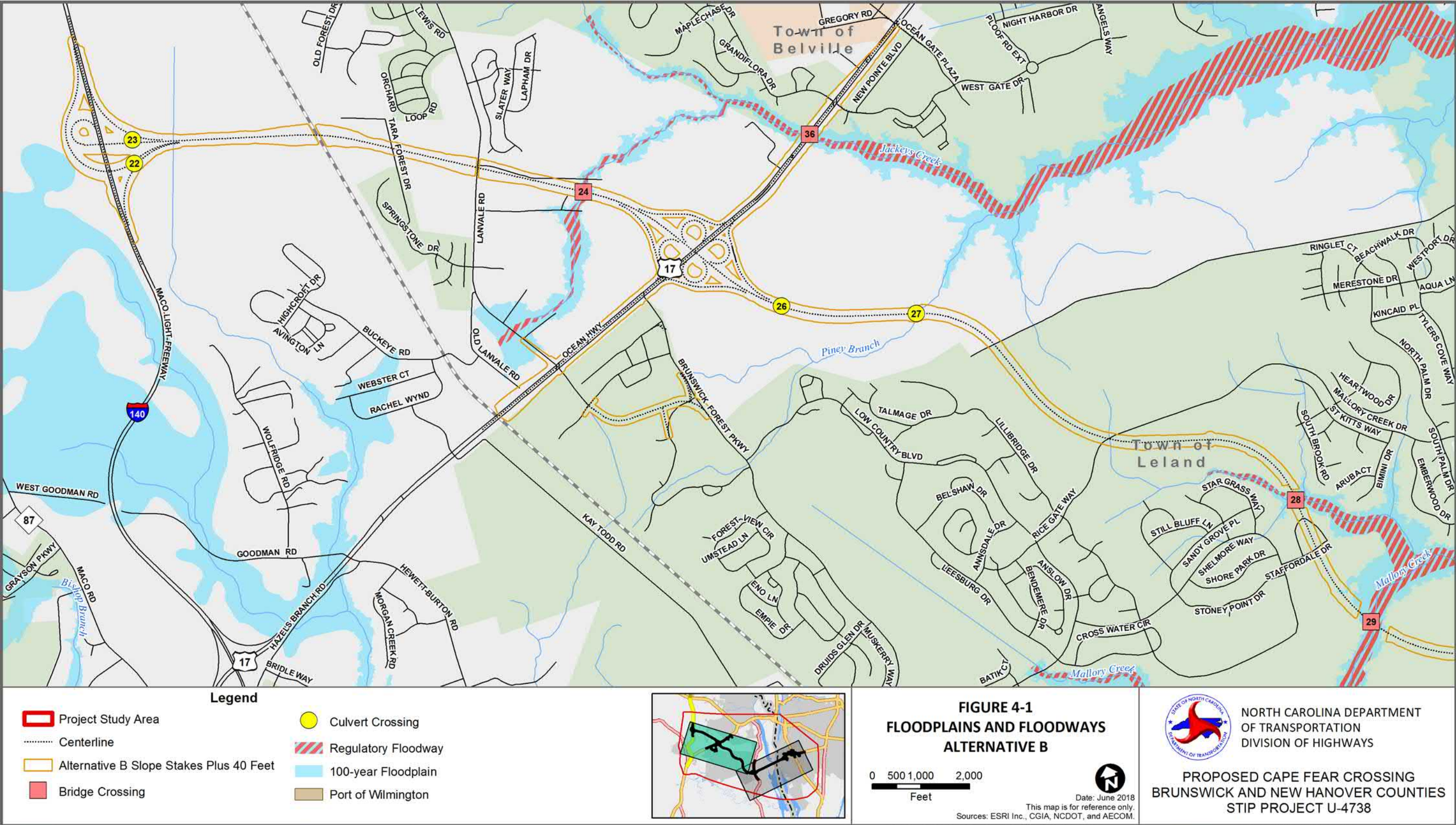


Figure 4-1: Floodplains and Floodways Impacts – Alternative B

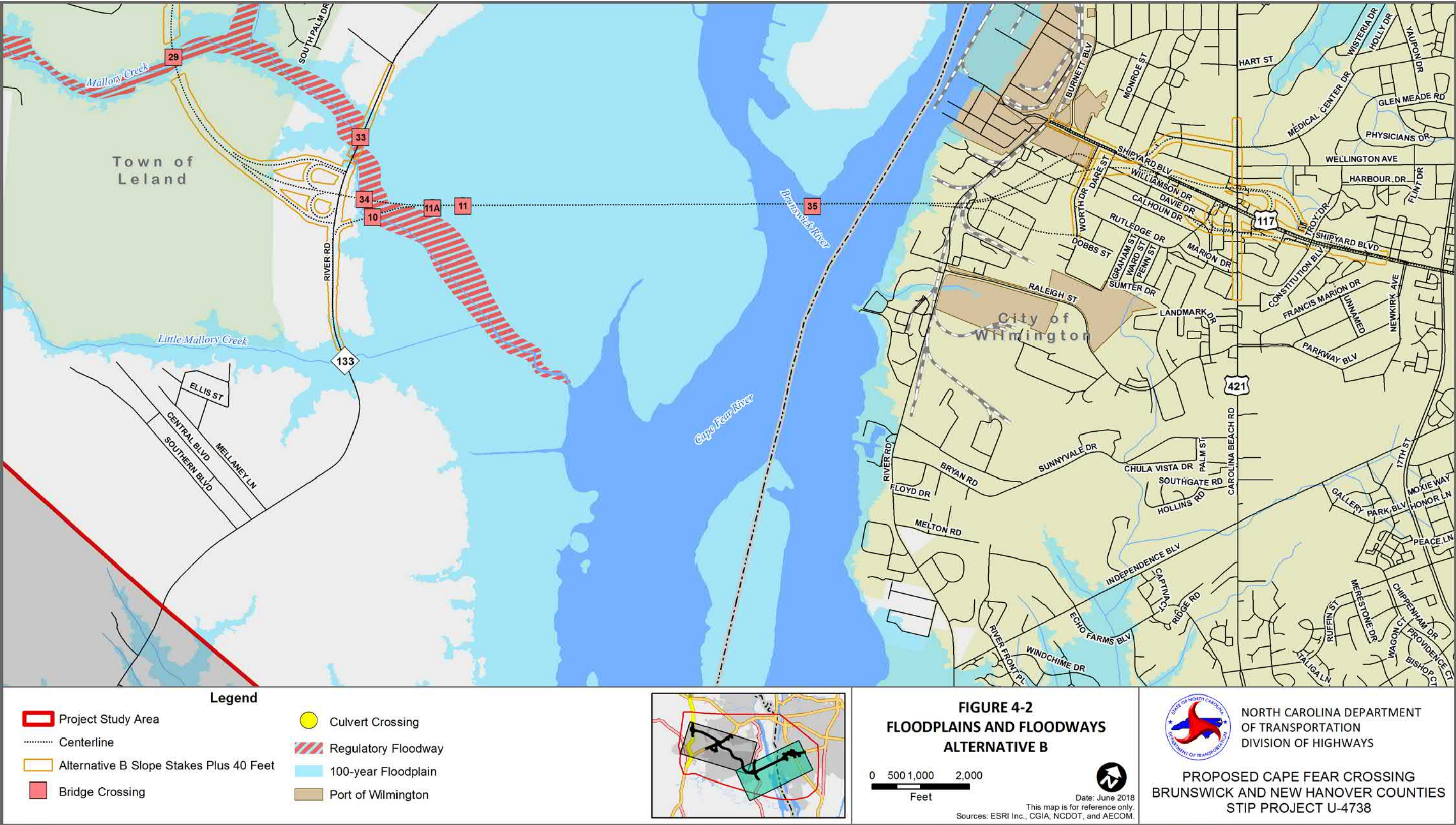


Figure 4-2: Floodplains and Floodways Impacts – Alternative B

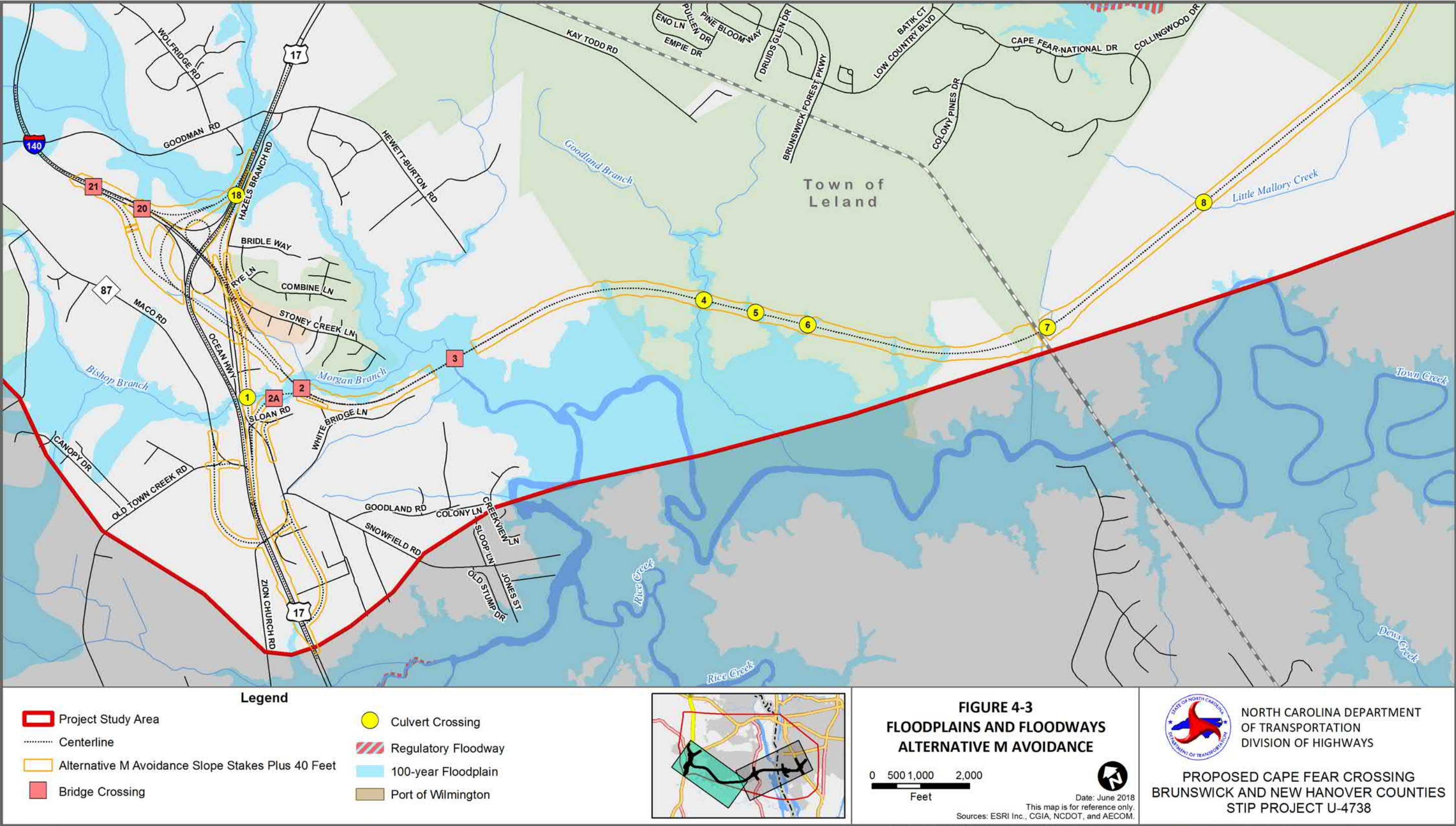


Figure 4-3: Floodplains and Floodways Impacts – Alternative M Avoidance

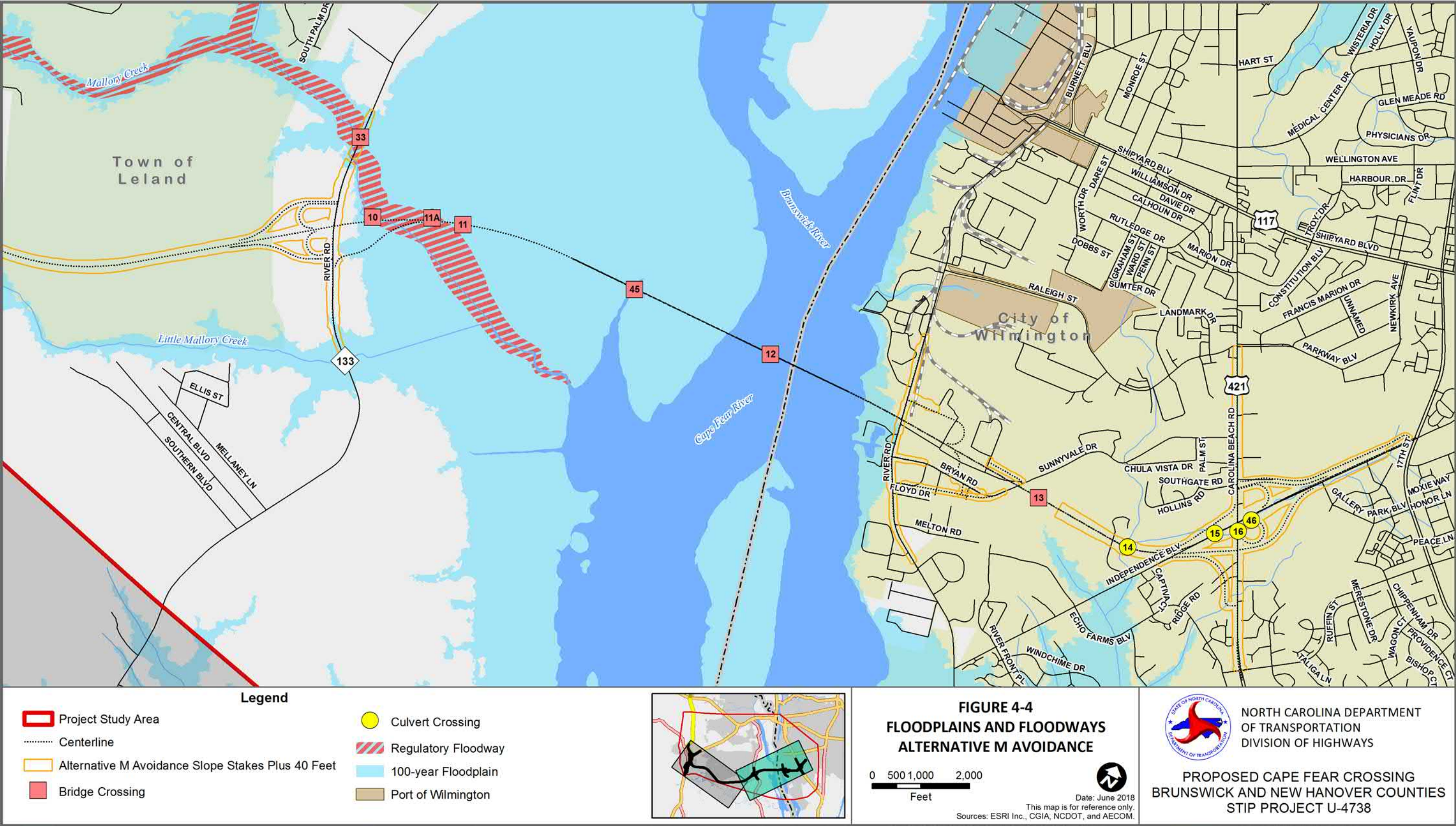


Figure 4-4: Floodplains and Floodways Impacts – Alternative M Avoidance

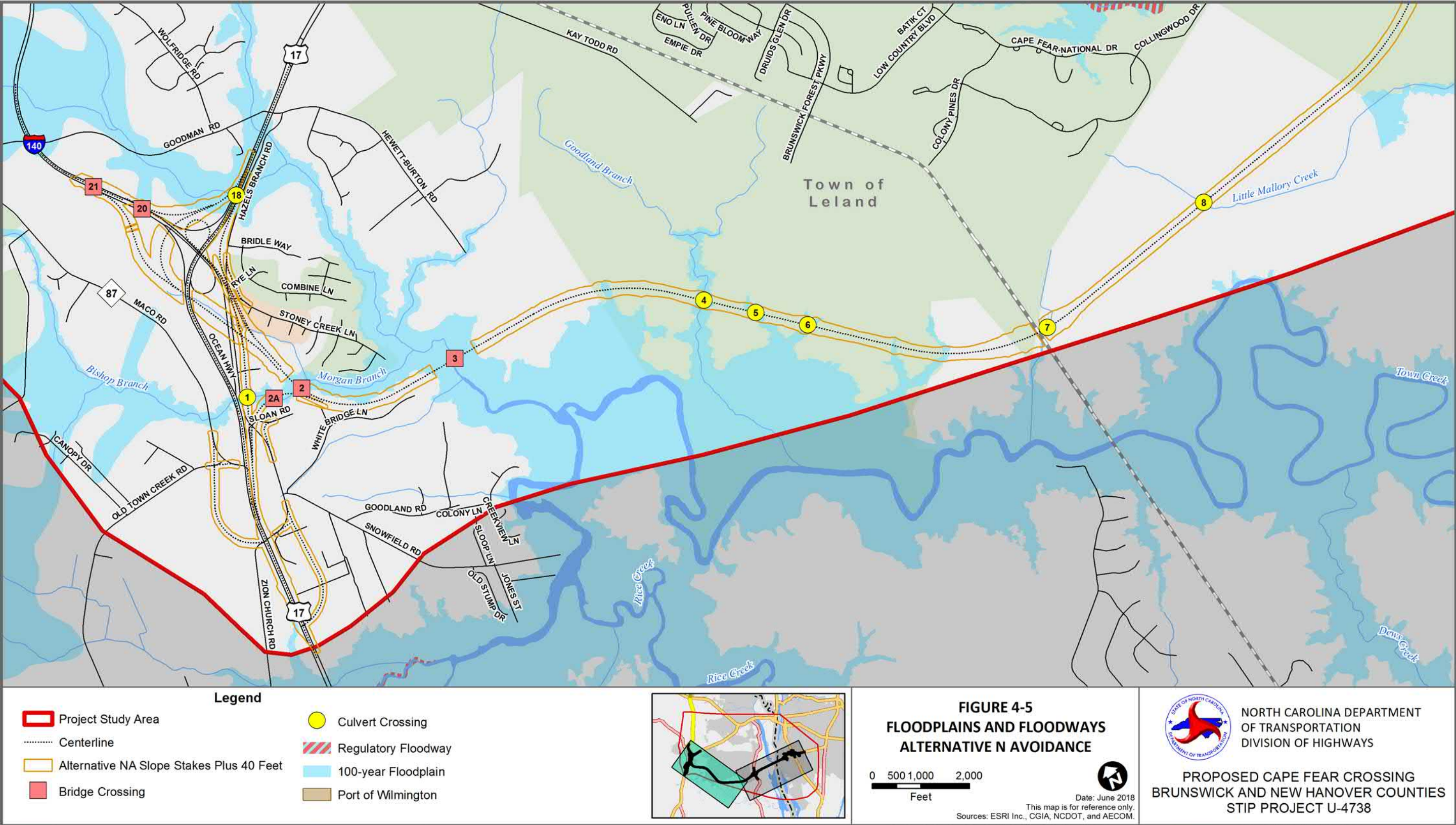


Figure 4-5: Floodplains and Floodways Impacts – Alternative N Avoidance

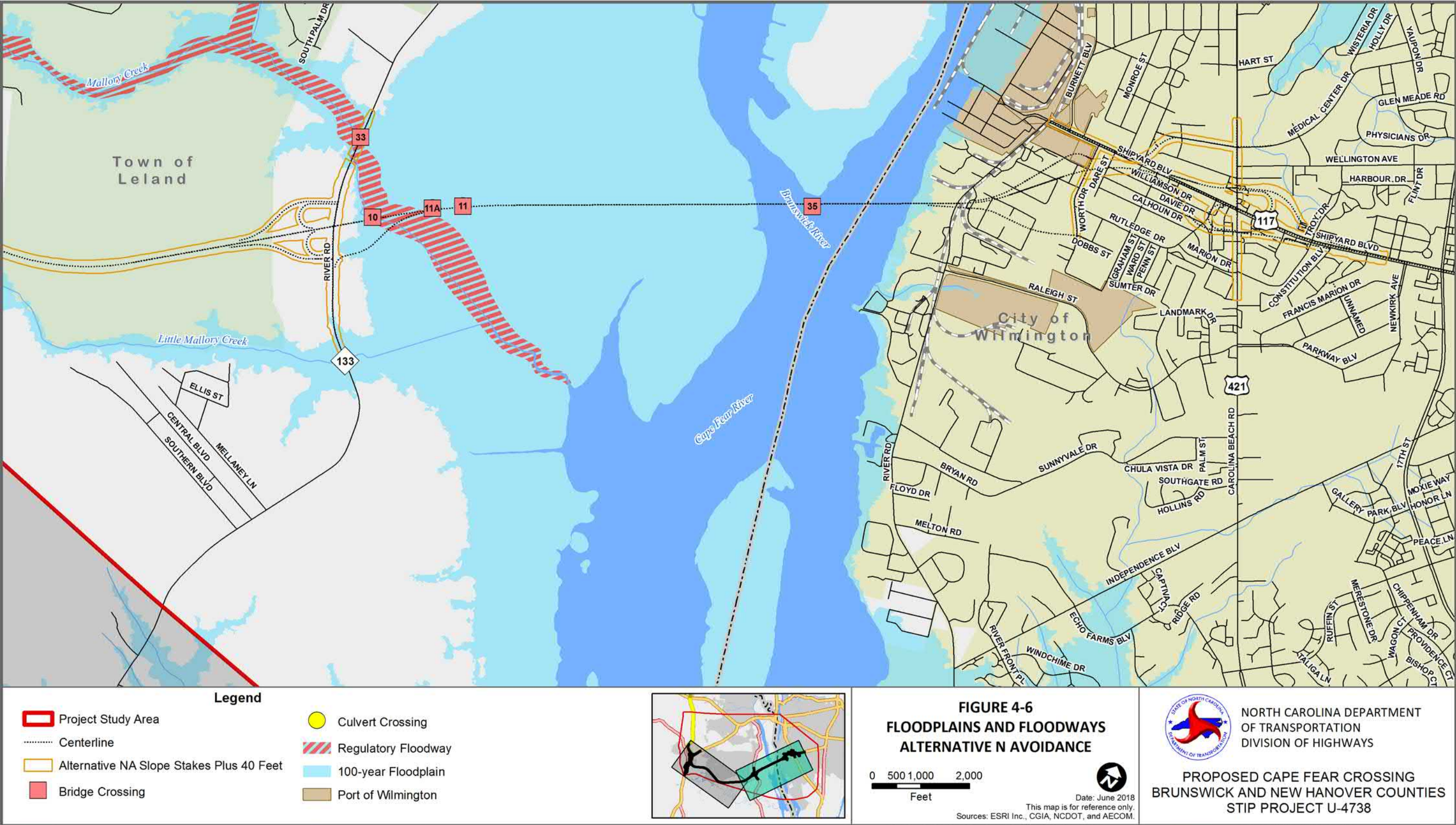


Figure 4-6: Floodplains and Floodways Impacts – Alternative N Avoidance

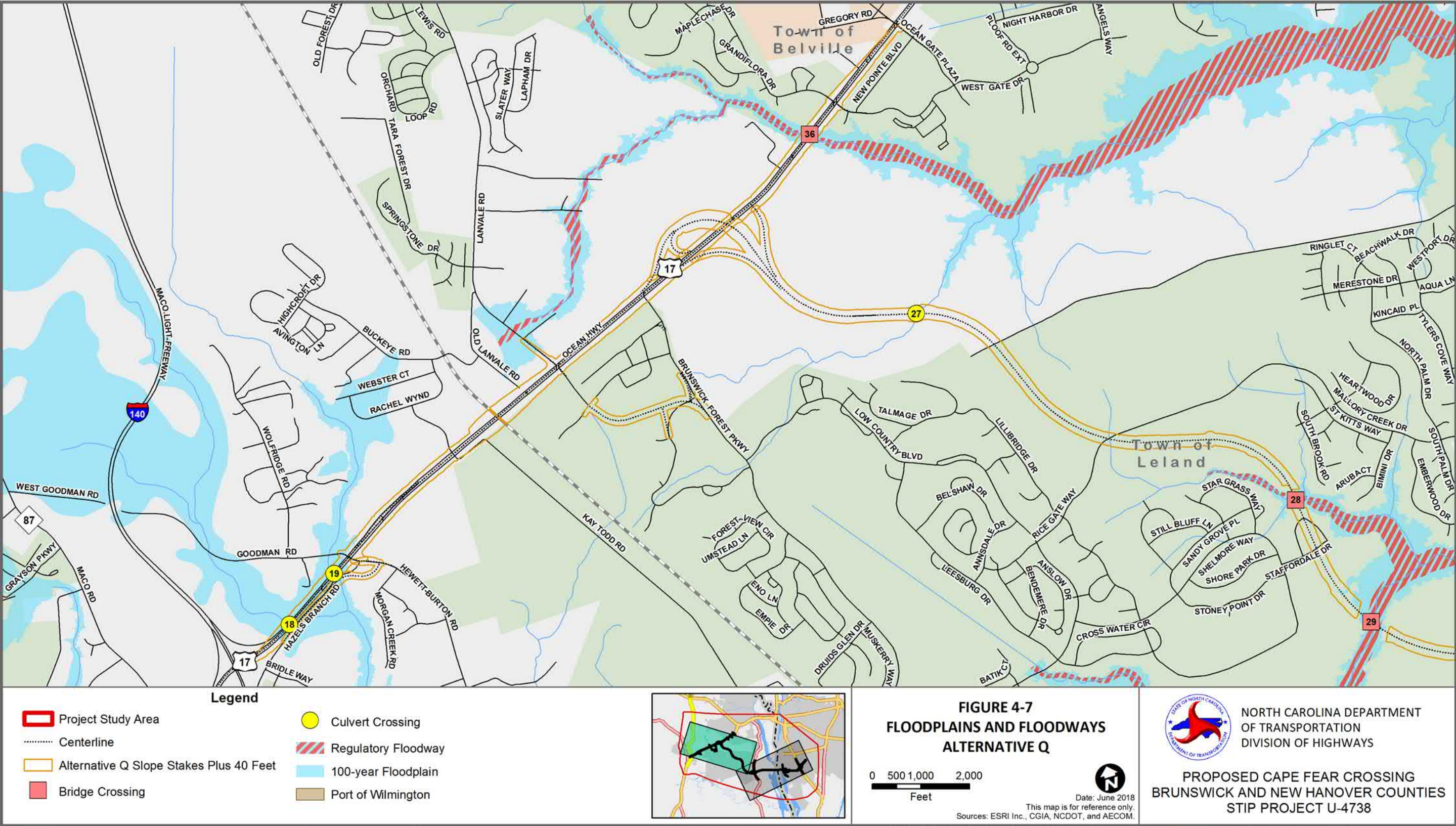


Figure 4-7: Floodplains and Floodways Impacts – Alternative Q

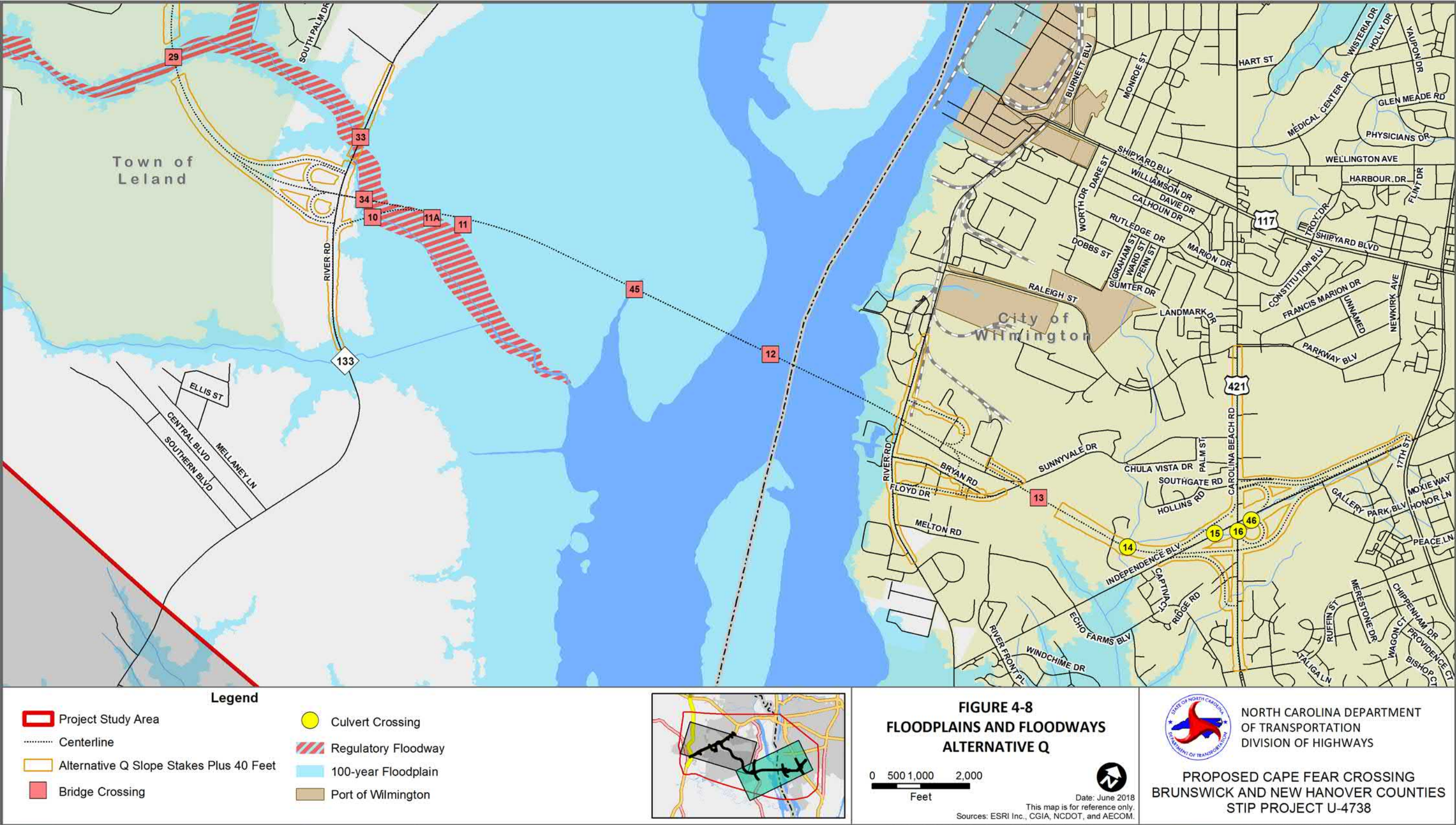


Figure 4-8: Floodplains and Floodways Impacts – Alternative Q

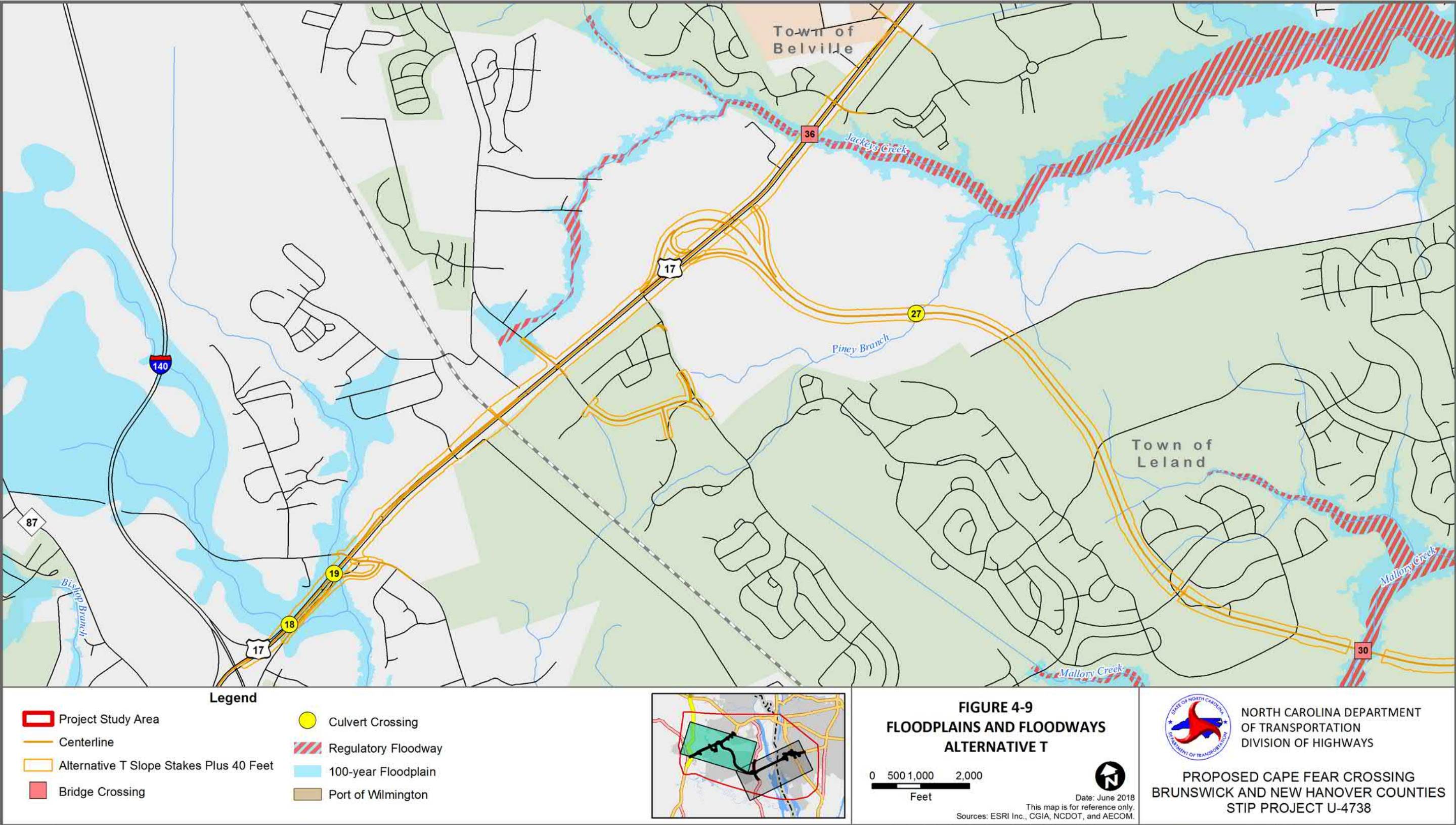


Figure 4-9: Floodplains and Floodways Impacts – Alternative T

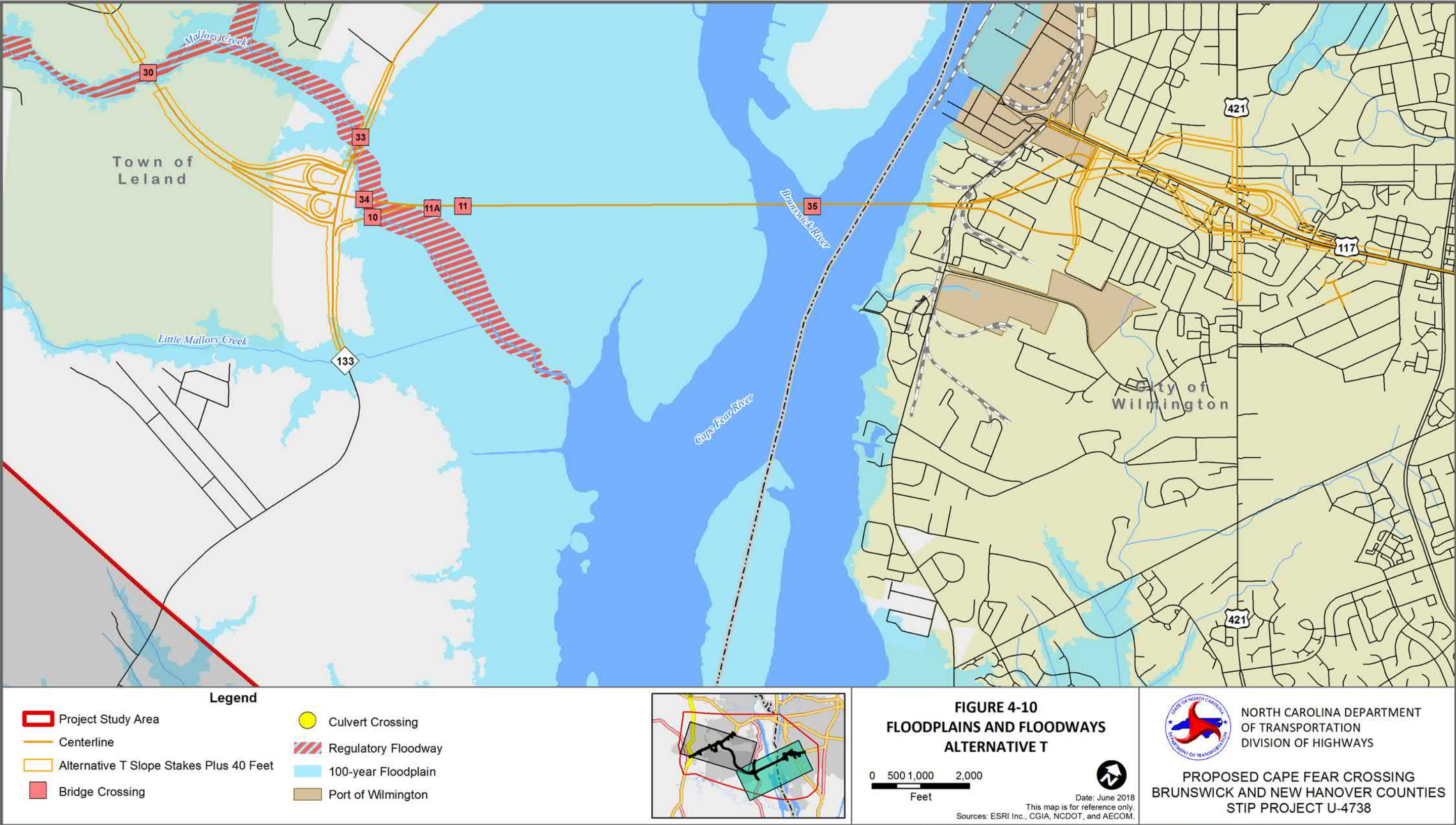


Figure 4-10: Floodplains and Floodways Impacts – Alternative T

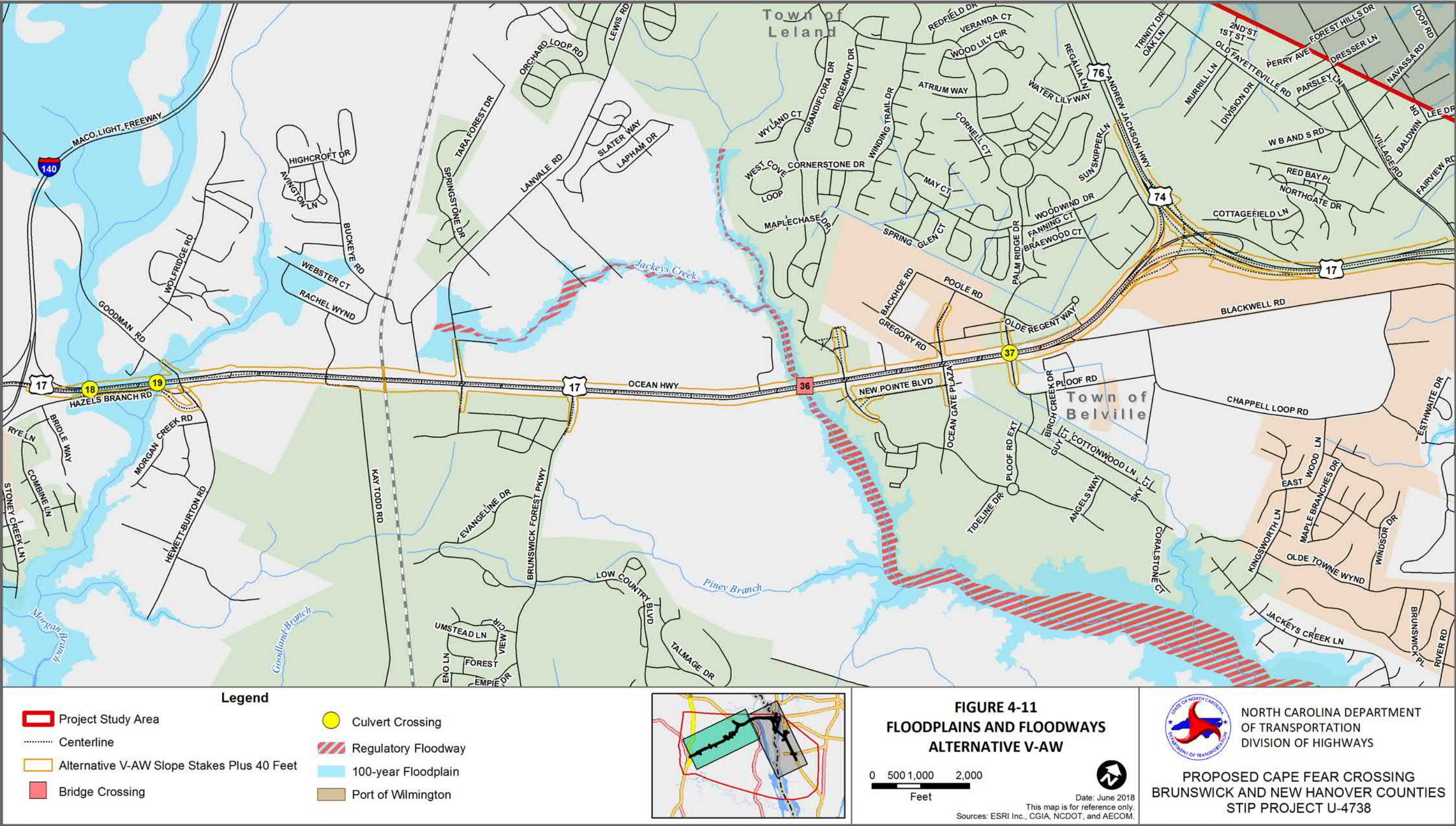


Figure 4-11: Floodplains and Floodways Impacts – Alternative V-AW

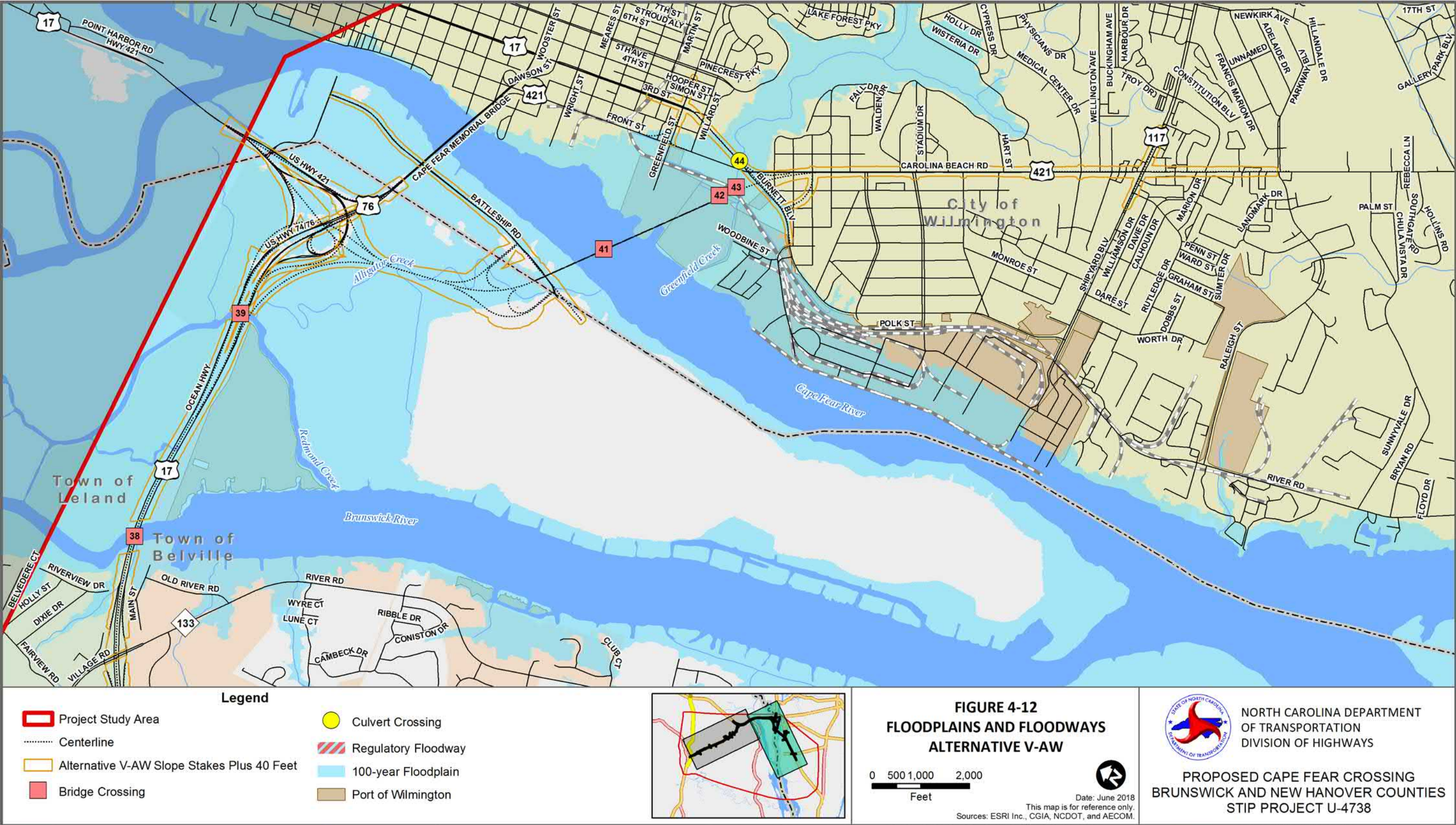


Figure 4-12: Floodplains and Floodways Impacts – Alternative V-AW

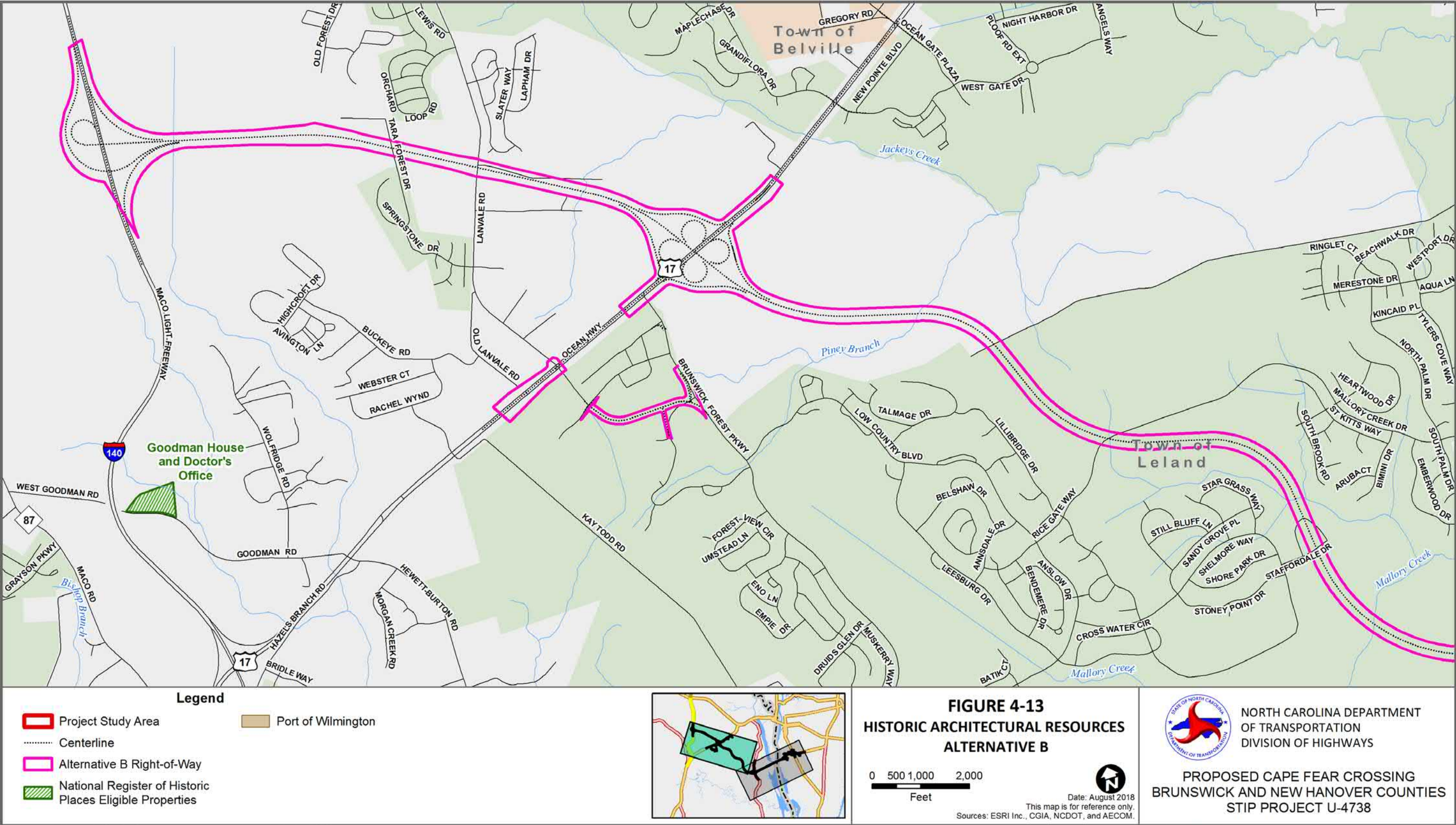


Figure 4-13: Historic Architectural Resource Impacts – Alternative B

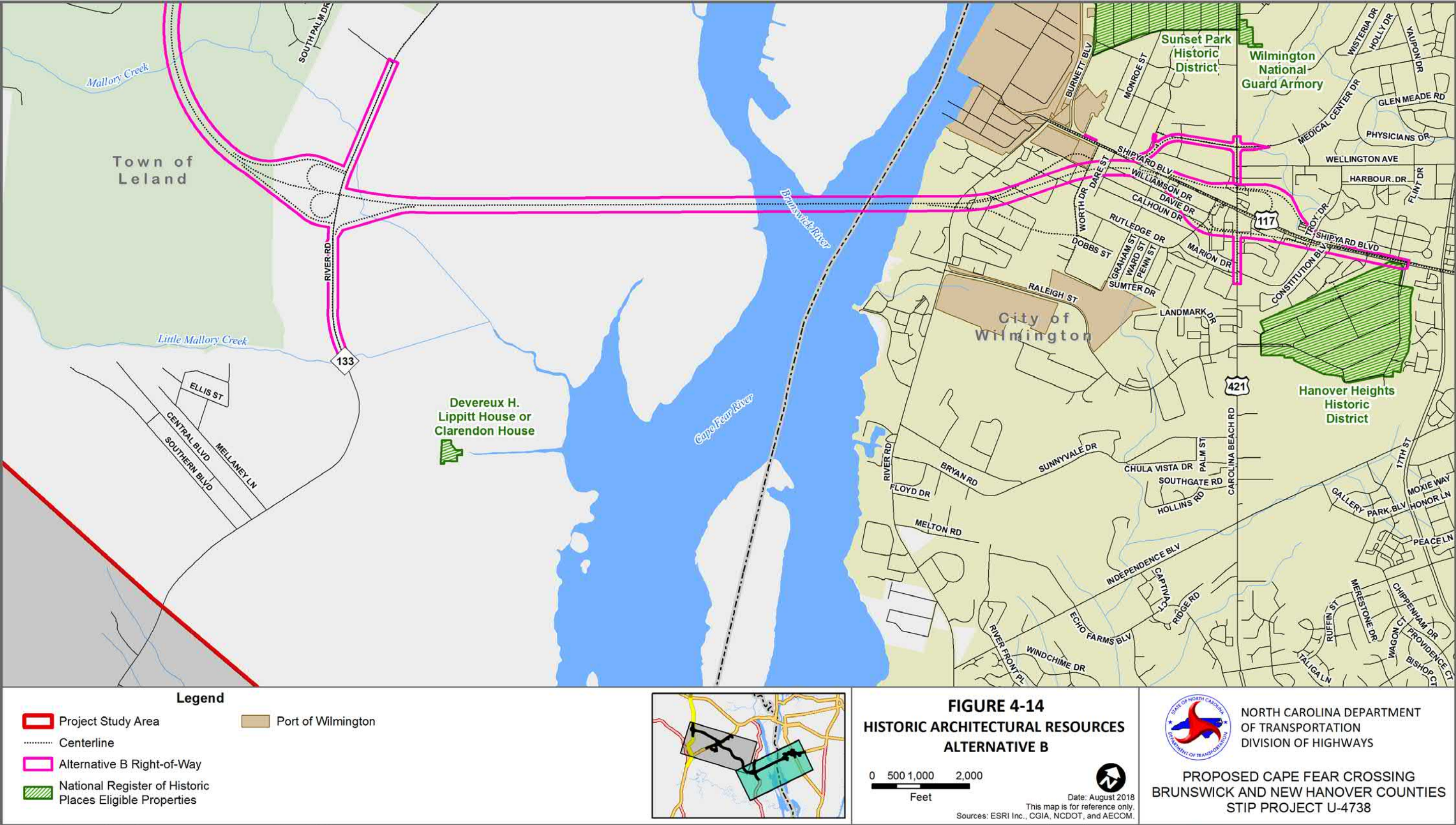


Figure 4-14: Historic Architectural Resource Impacts – Alternative B

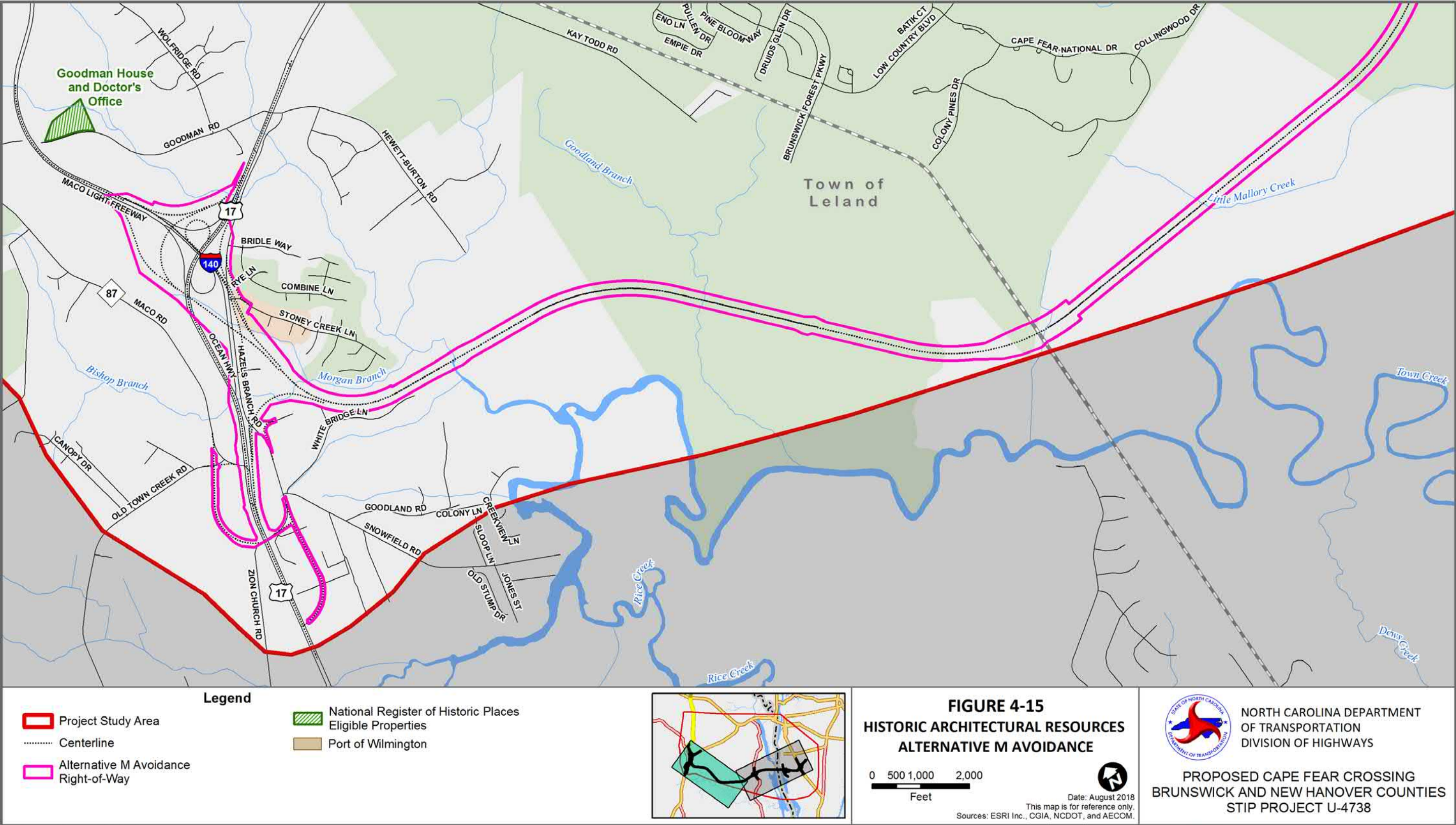


Figure 4-15: Historic Architectural Resource Impacts – Alternative M Avoidance

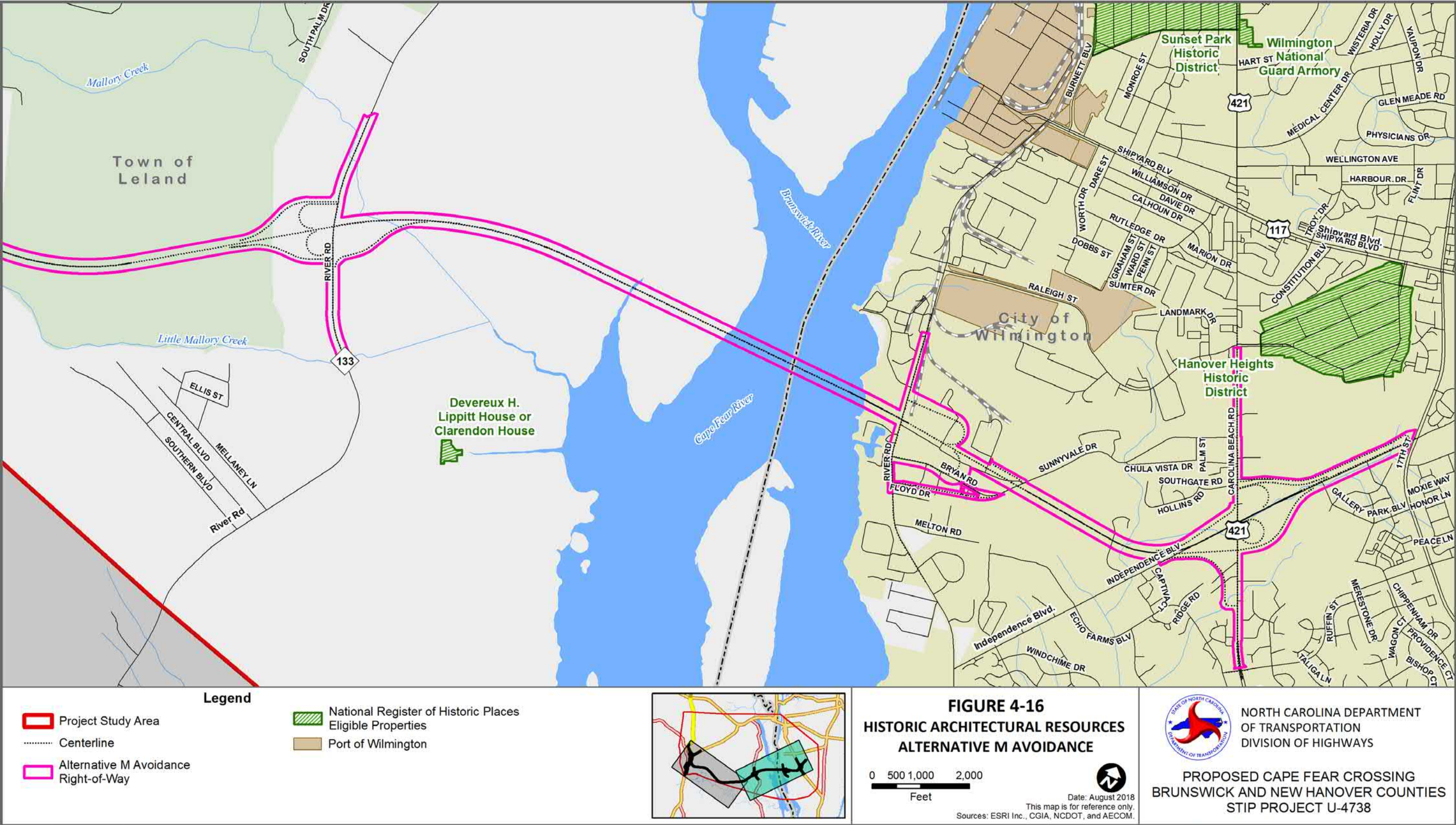


Figure 4-16: Historic Architectural Resource Impacts – Alternative M Avoidance

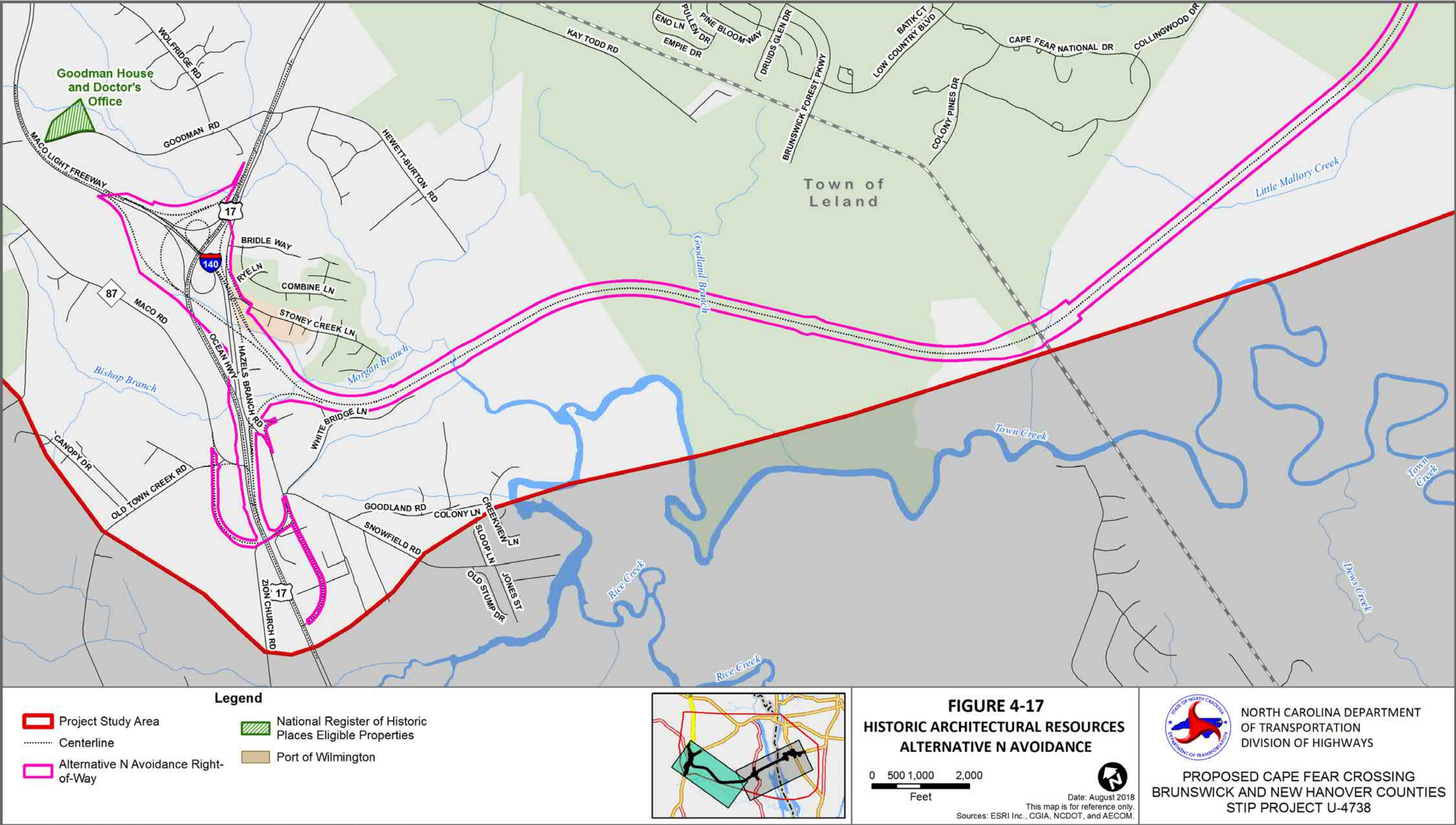


Figure 4-17: Historic Architectural Resource Impacts – Alternative N Avoidance

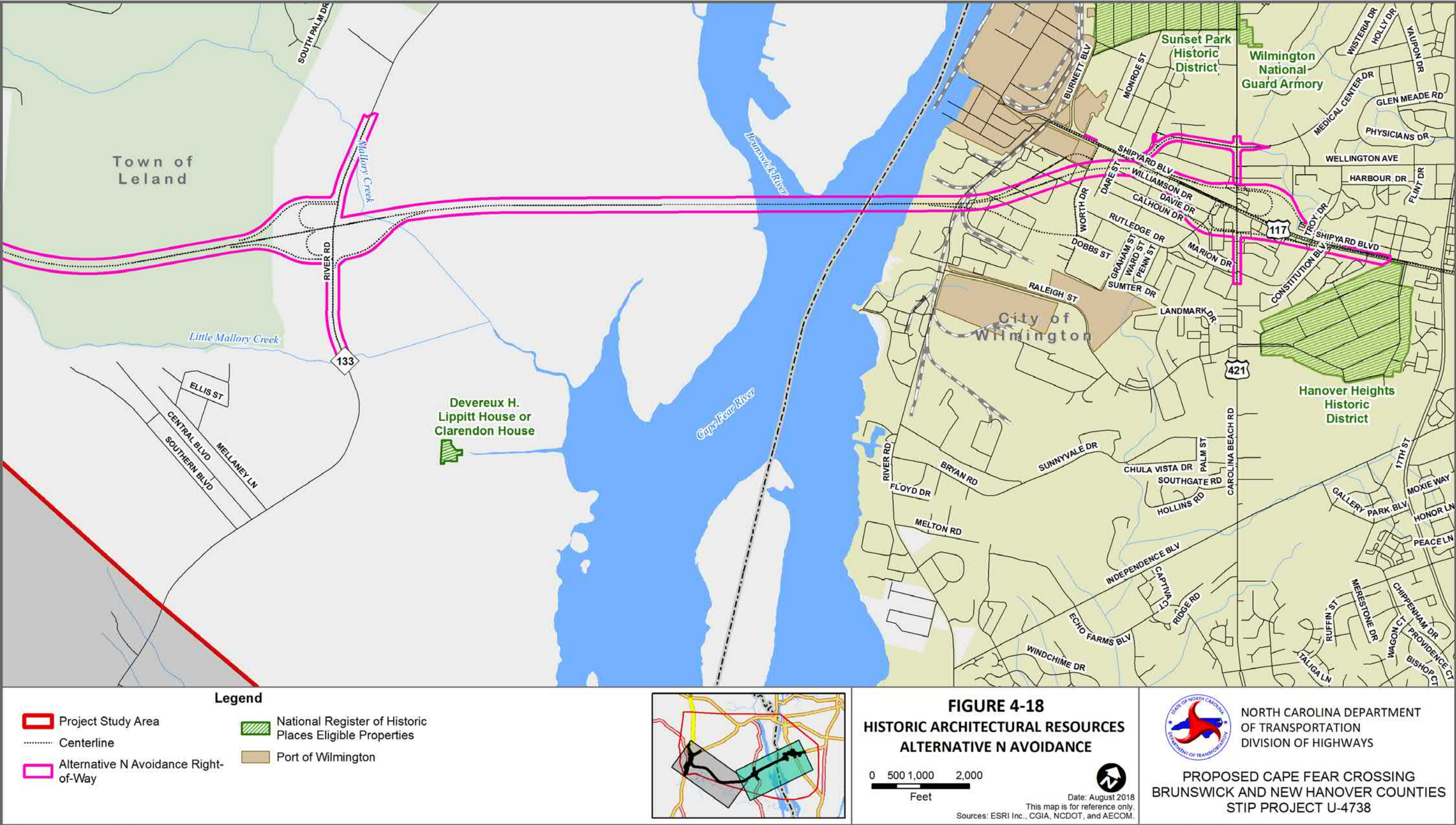


Figure 4-18: Historic Architectural Resource Impacts – Alternative N Avoidance

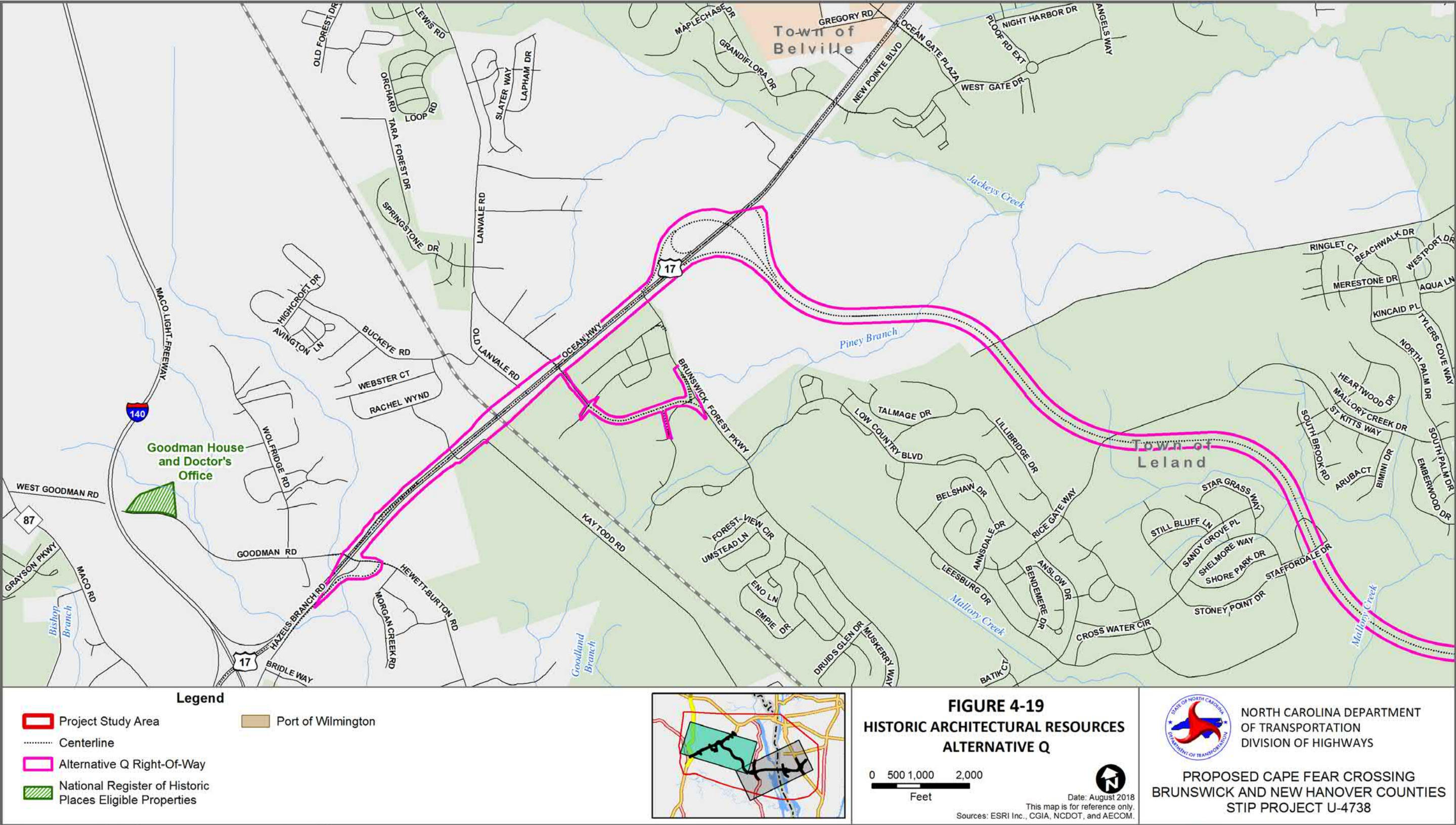


Figure 4-19: Historic Architectural Resource Impacts – Alternative Q

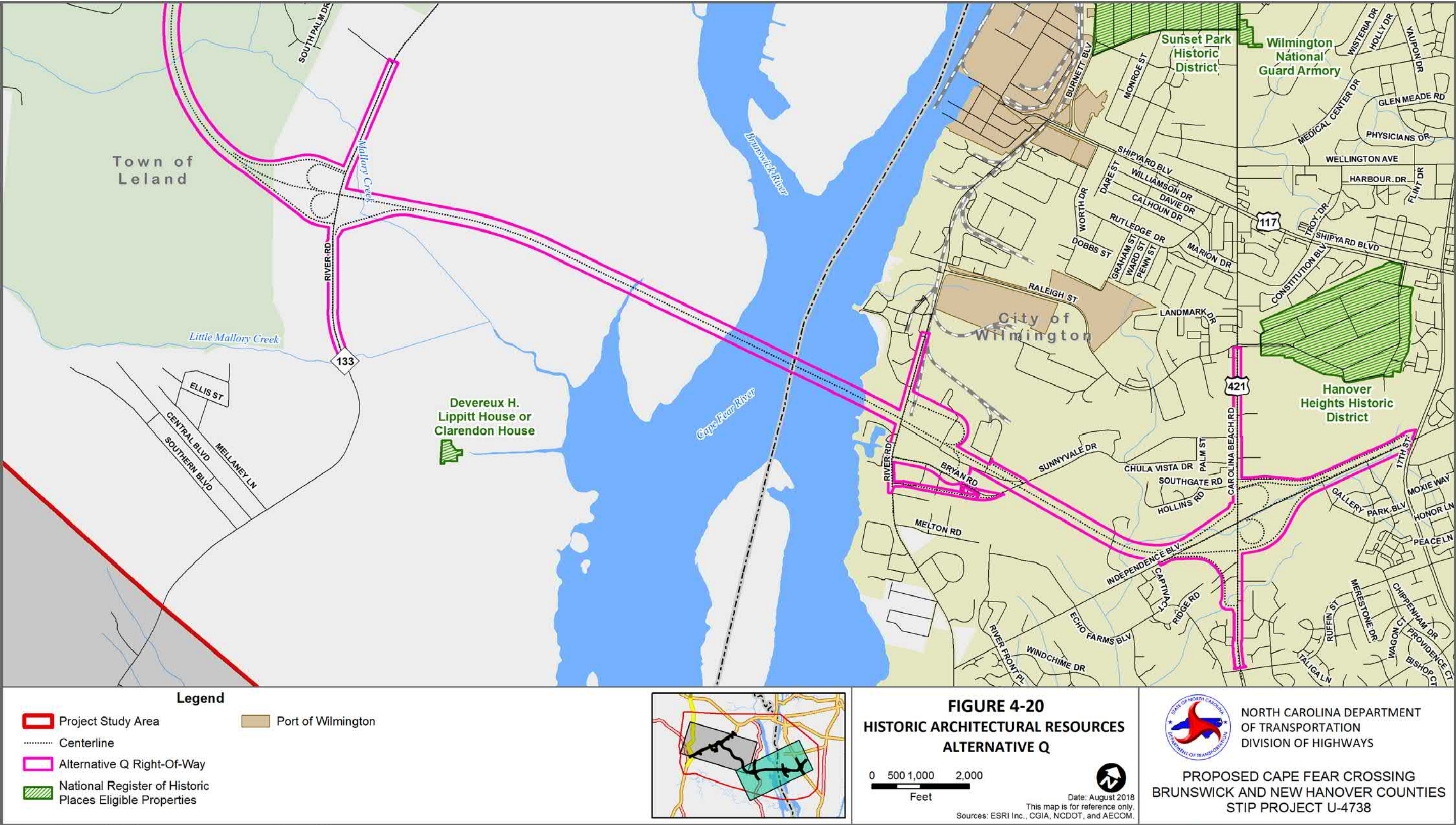


Figure 4-20: Historic Architectural Resource Impacts – Alternative Q

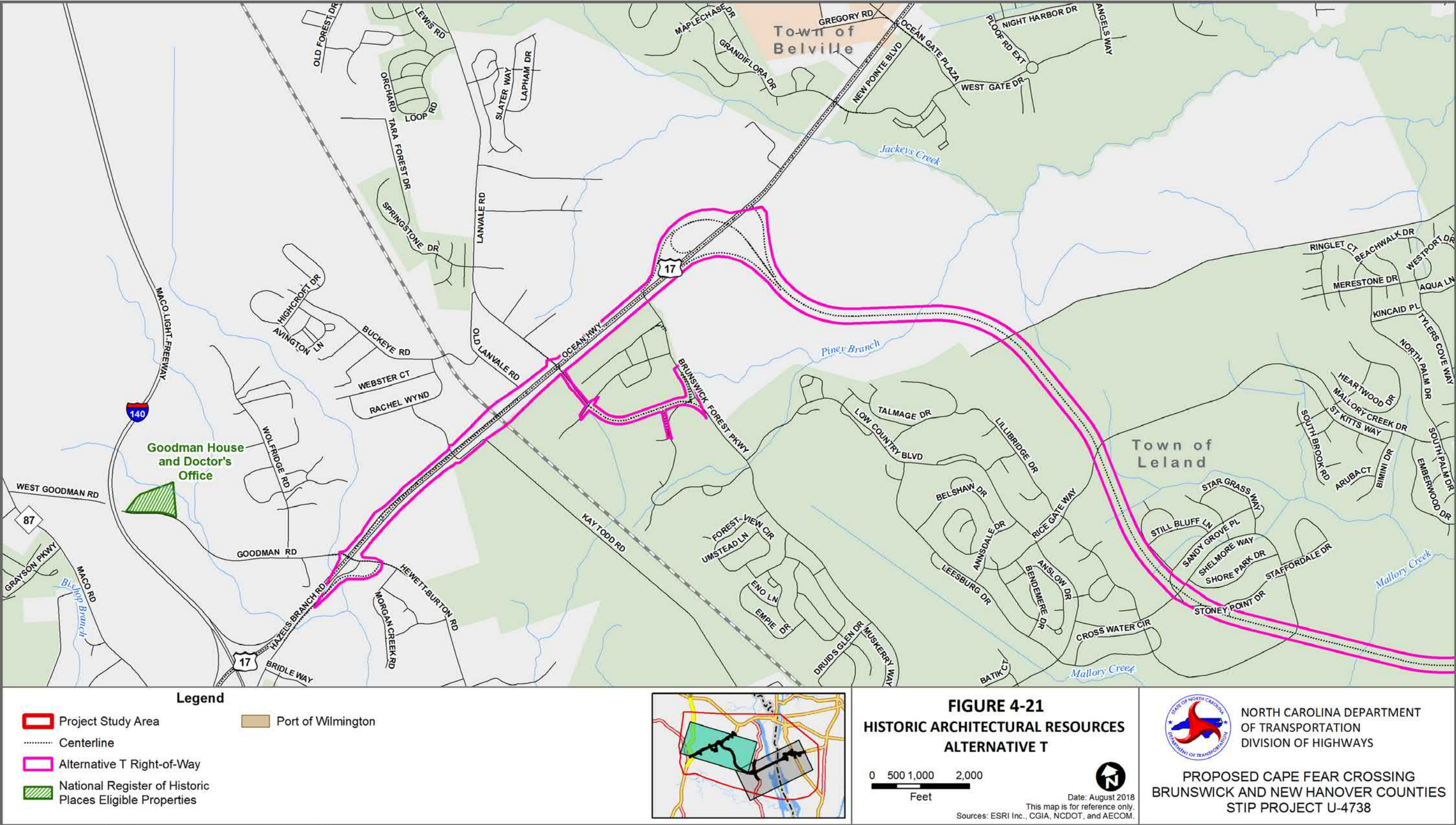


Figure 4-21: Historic Architectural Resource Impacts – Alternative T

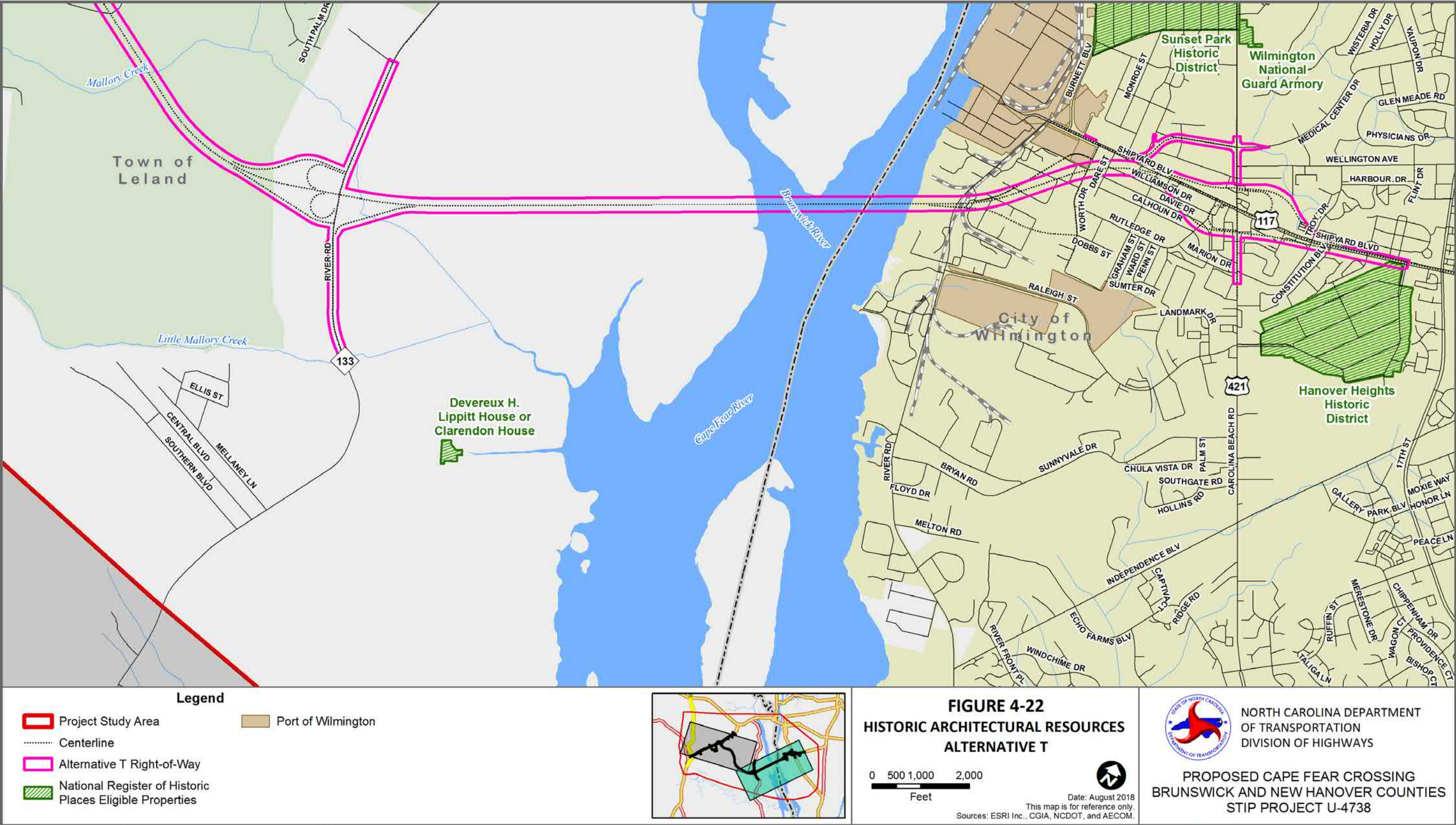


Figure 4-22: Historic Architectural Resource Impacts – Alternative T

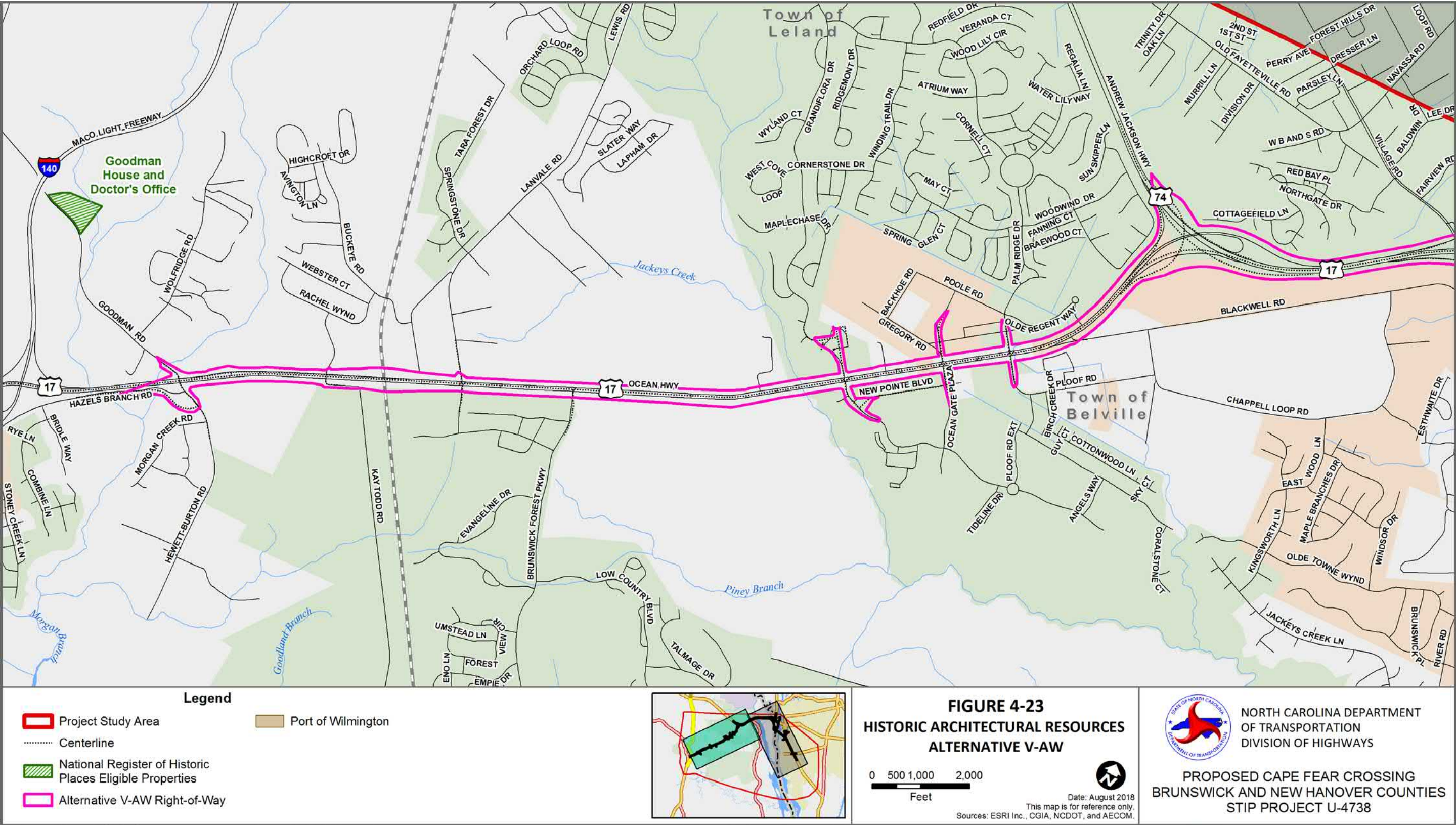


Figure 4-23: Historic Architectural Resource Impacts – Alternative V-AW

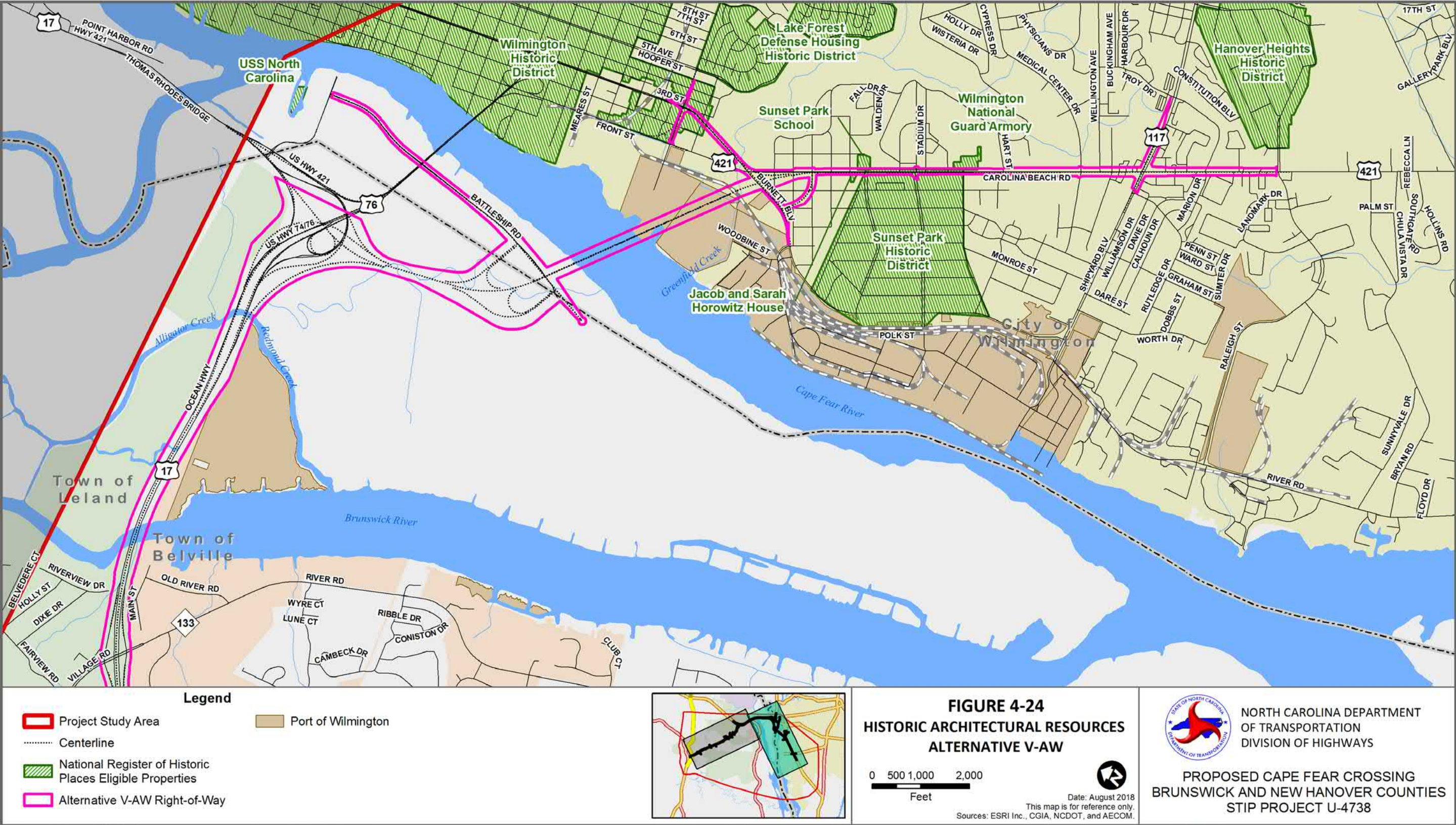


Figure 4-24: Historic Architectural Resource Impacts – Alternative V-AW

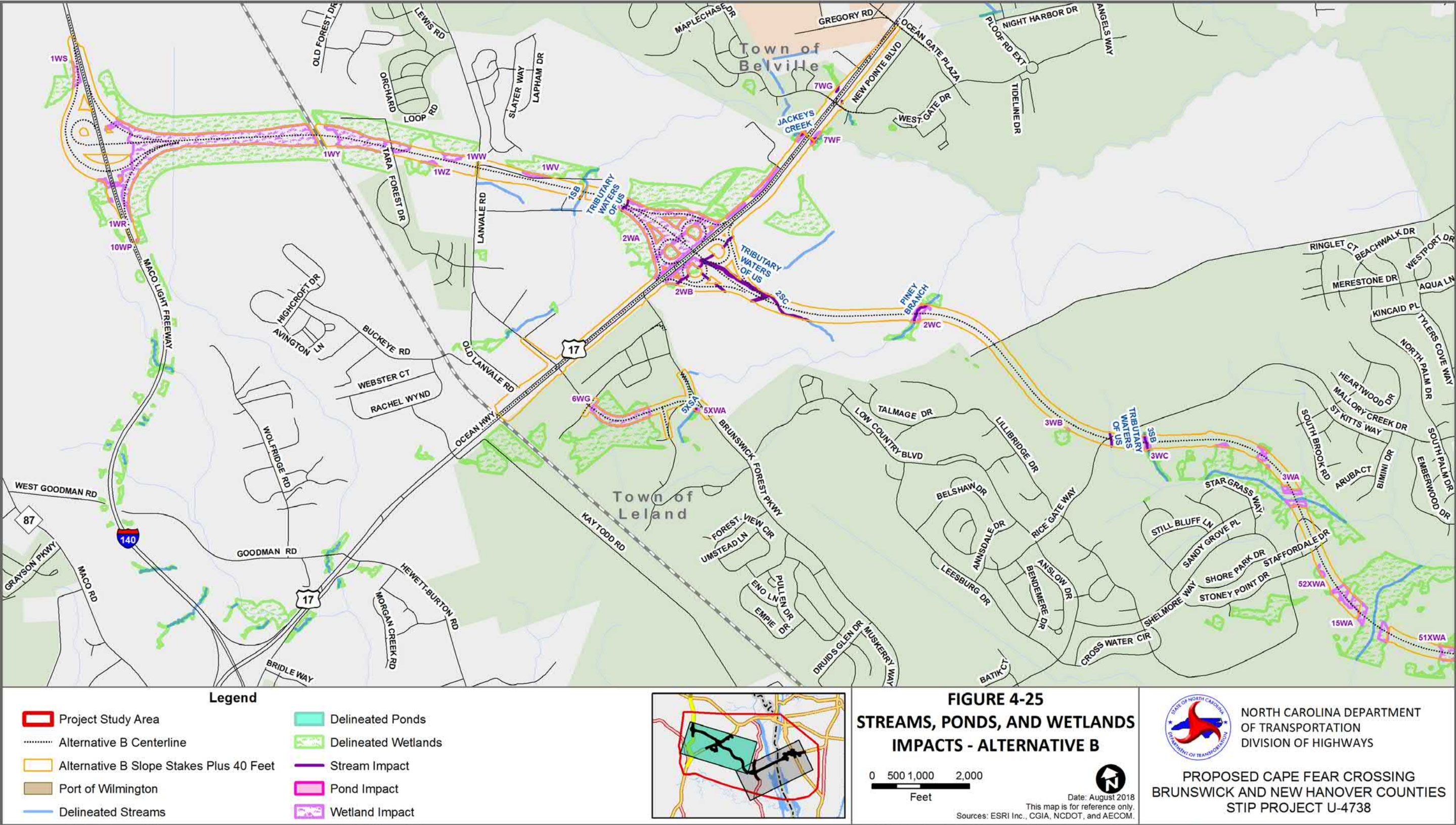


Figure 4-25: Stream, Ponds, and Wetlands Impacts – Alternative B

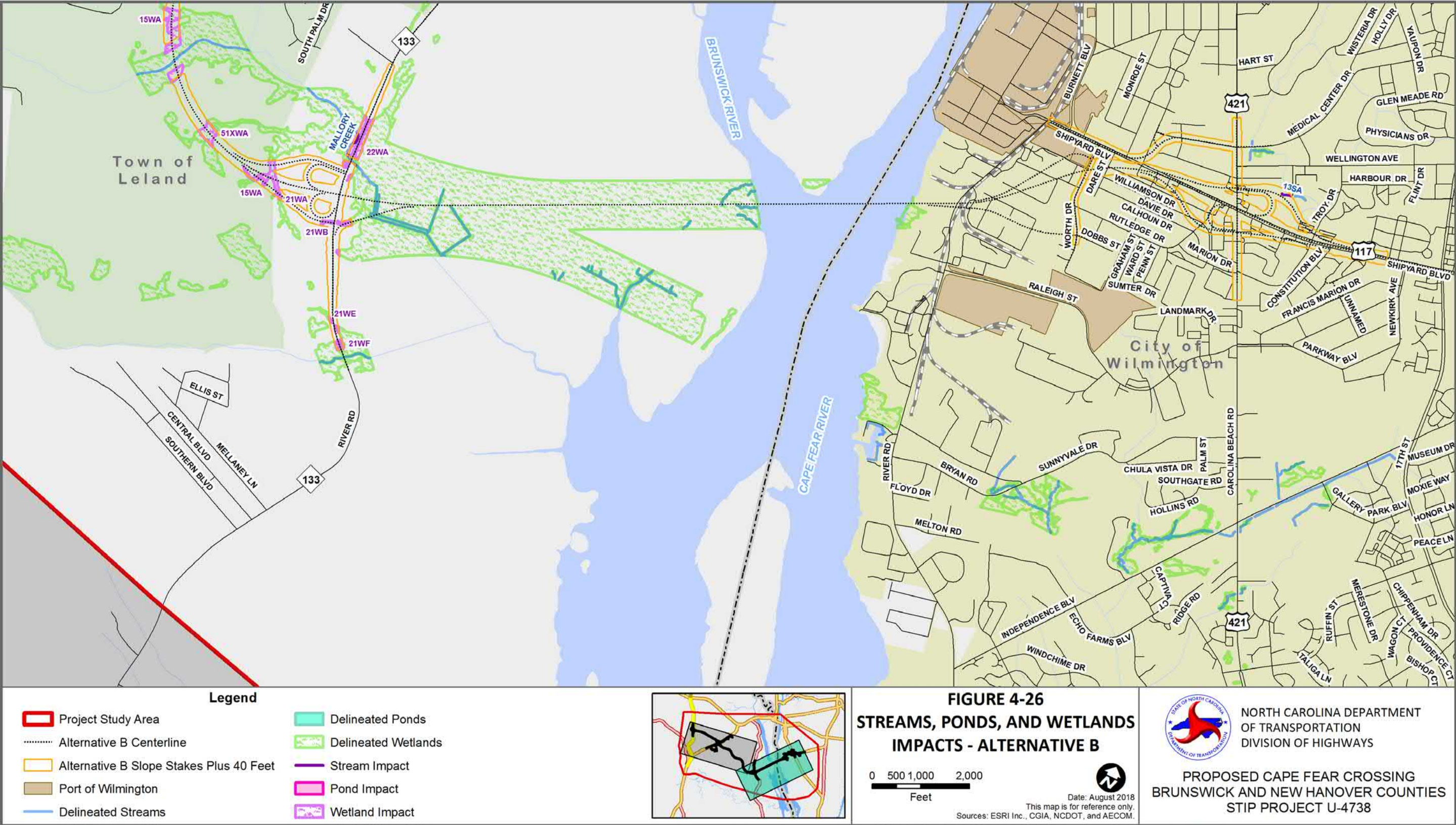


Figure 4-26: Stream, Ponds, and Wetlands Impacts – Alternative B

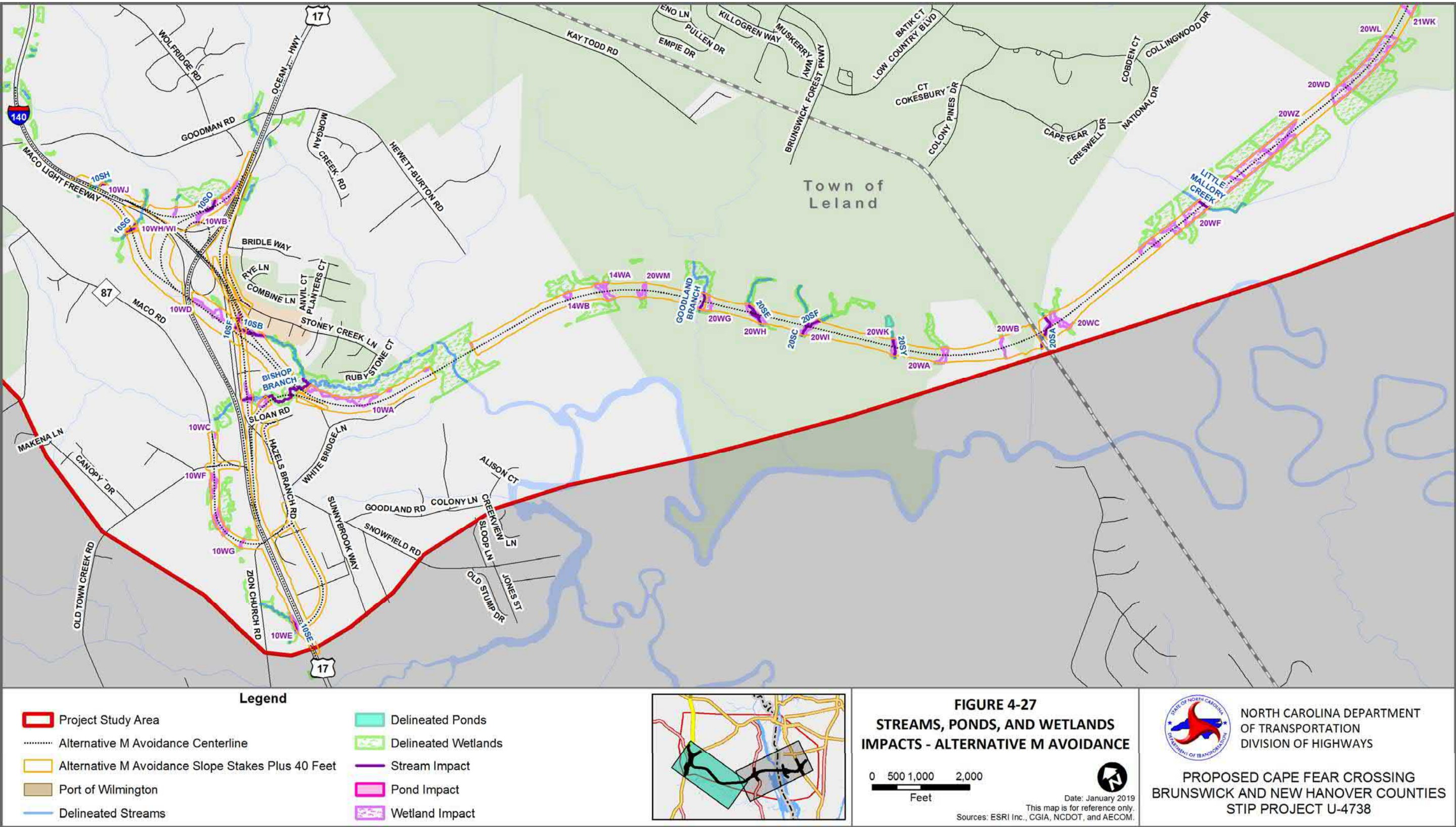


Figure 4-27: Stream, Ponds, and Wetlands Impacts – Alternative MA

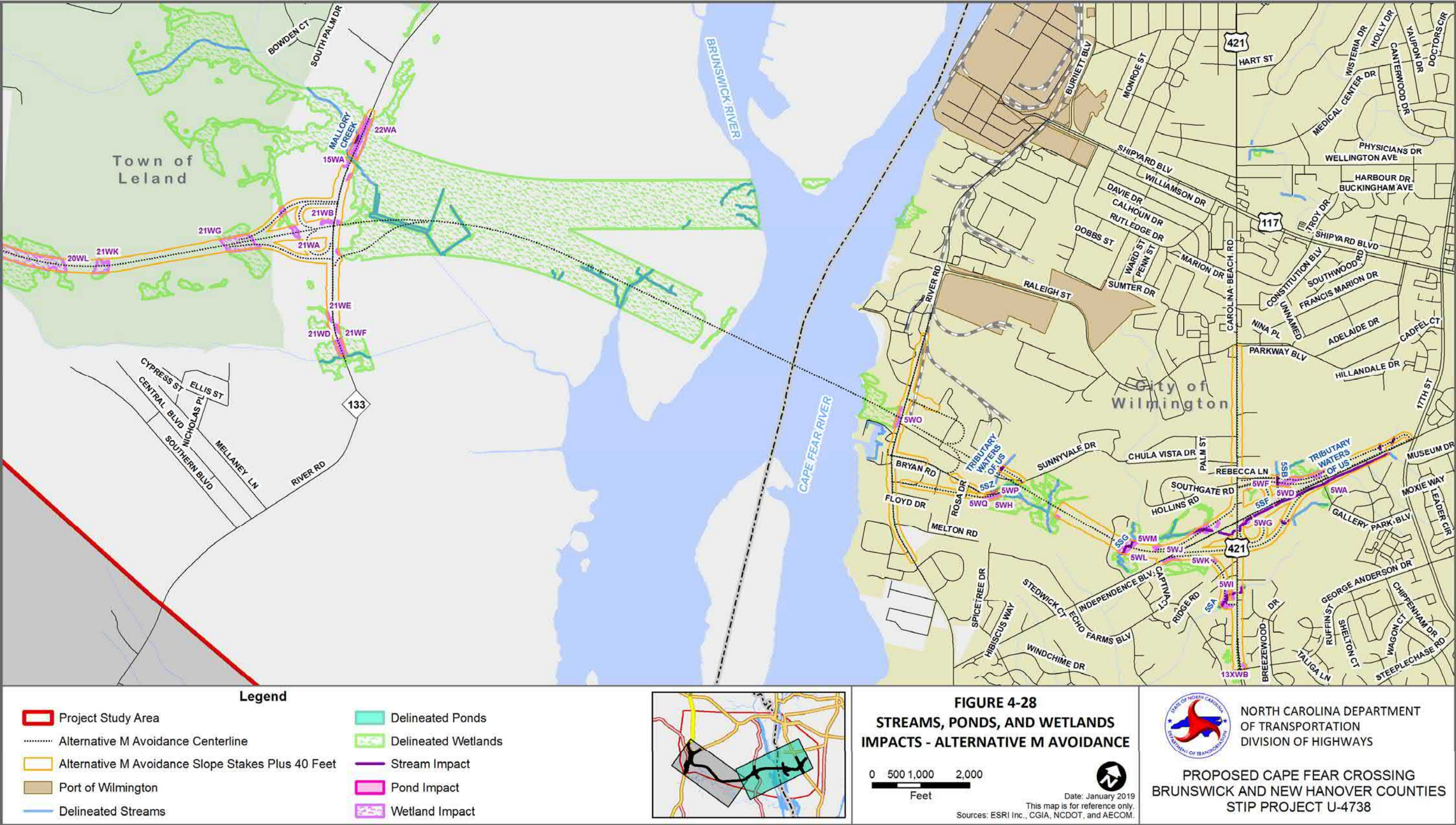


Figure 1-1: Project Location and Vicinity

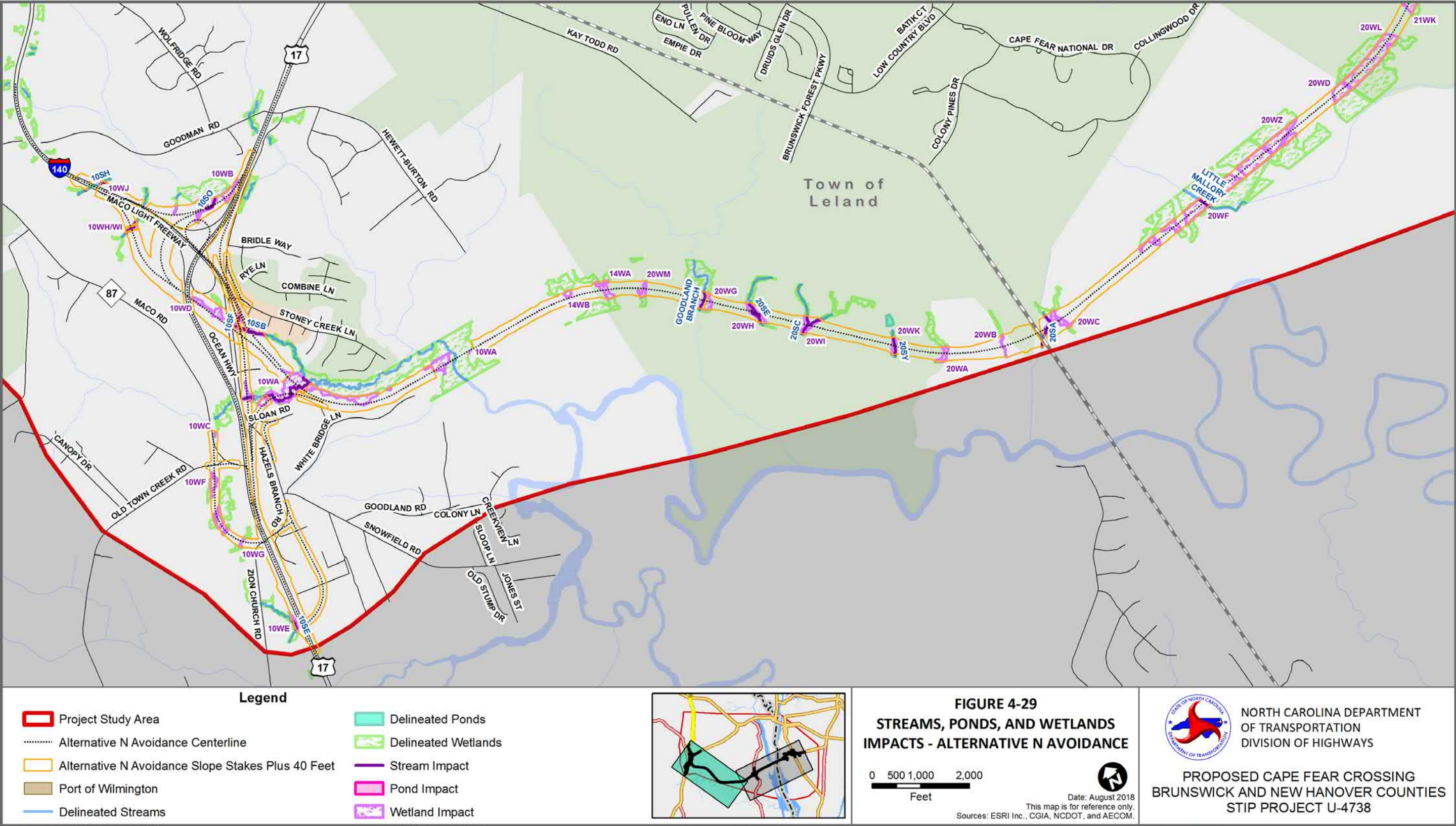


Figure 4-29: Stream, Ponds, and Wetlands Impacts – Alternative N Avoidance

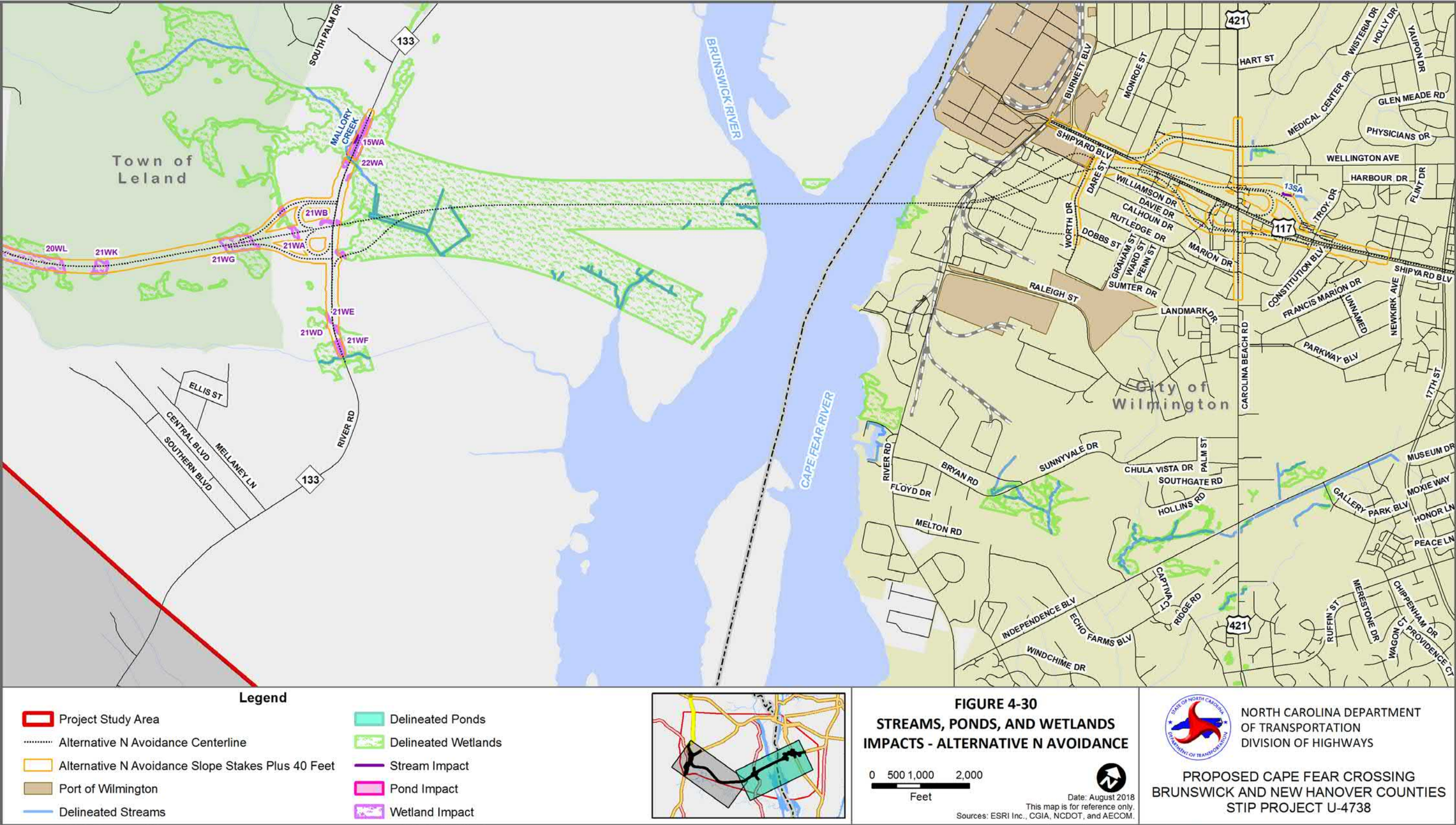


Figure 4-30: Stream, Ponds, and Wetlands Impacts – Alternative N Avoidance

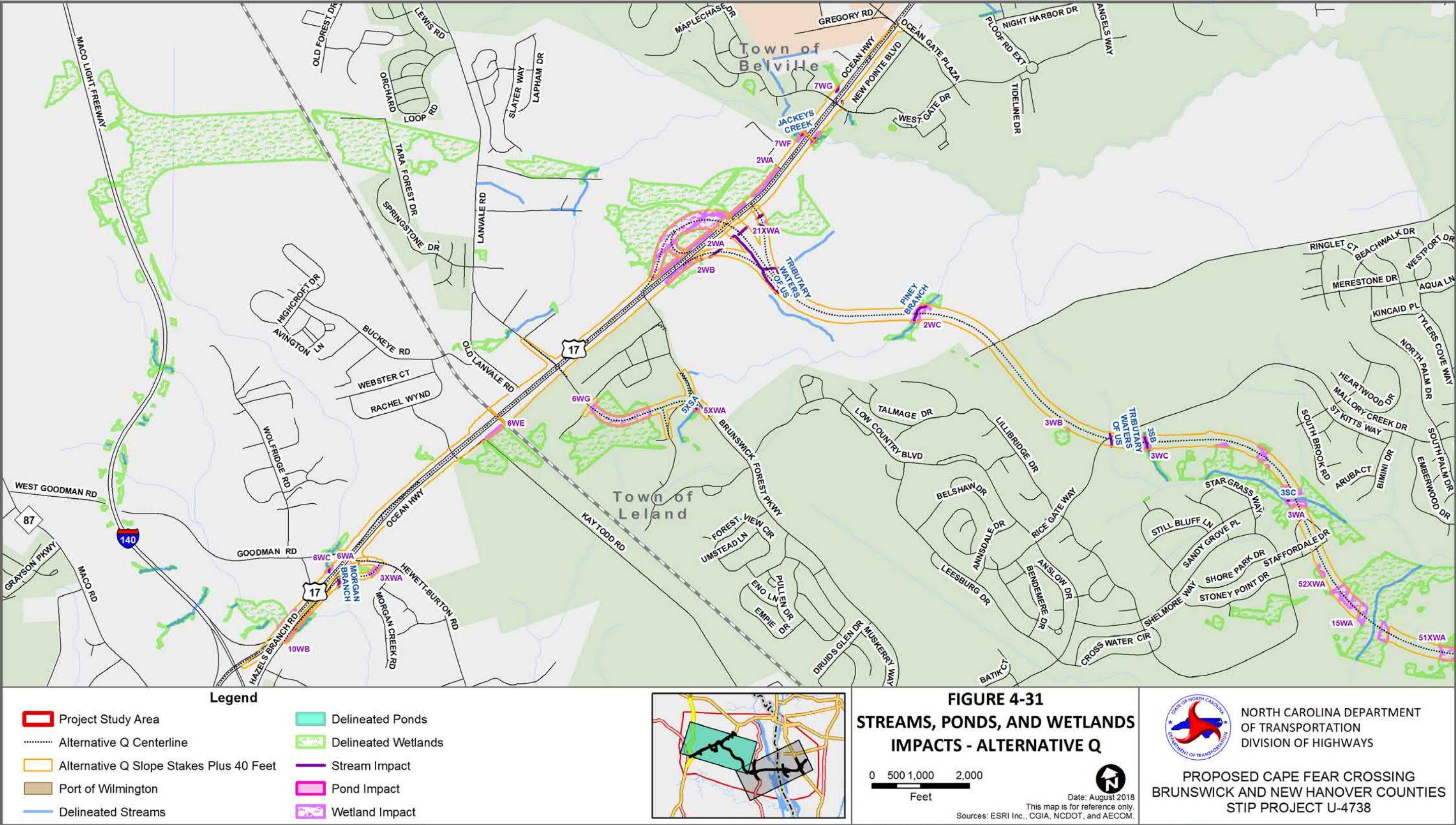


Figure 4-31: Stream, Ponds, and Wetlands Impacts – Alternative Q

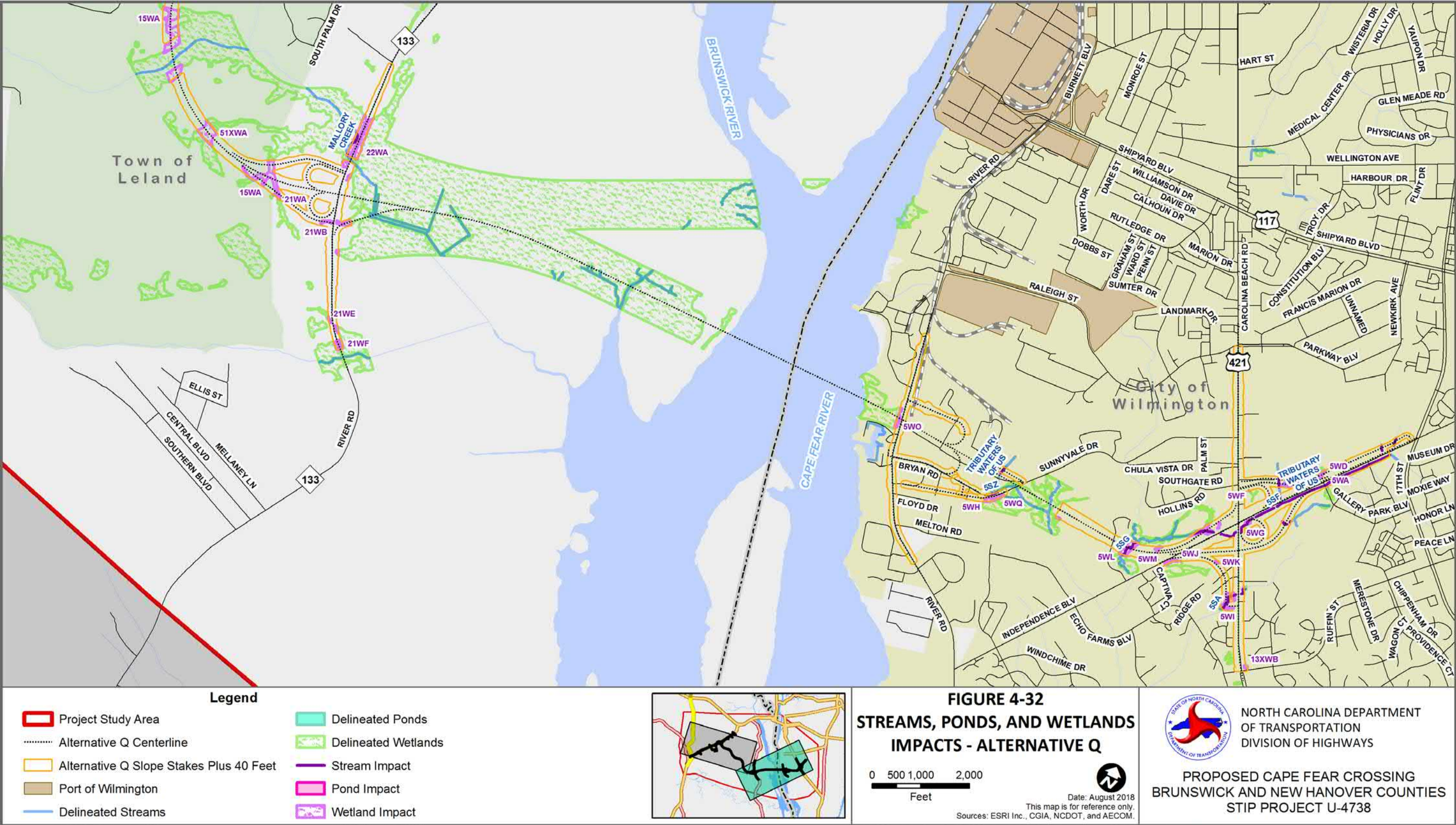


Figure 4-32: Stream, Ponds, and Wetlands Impacts – Alternative Q

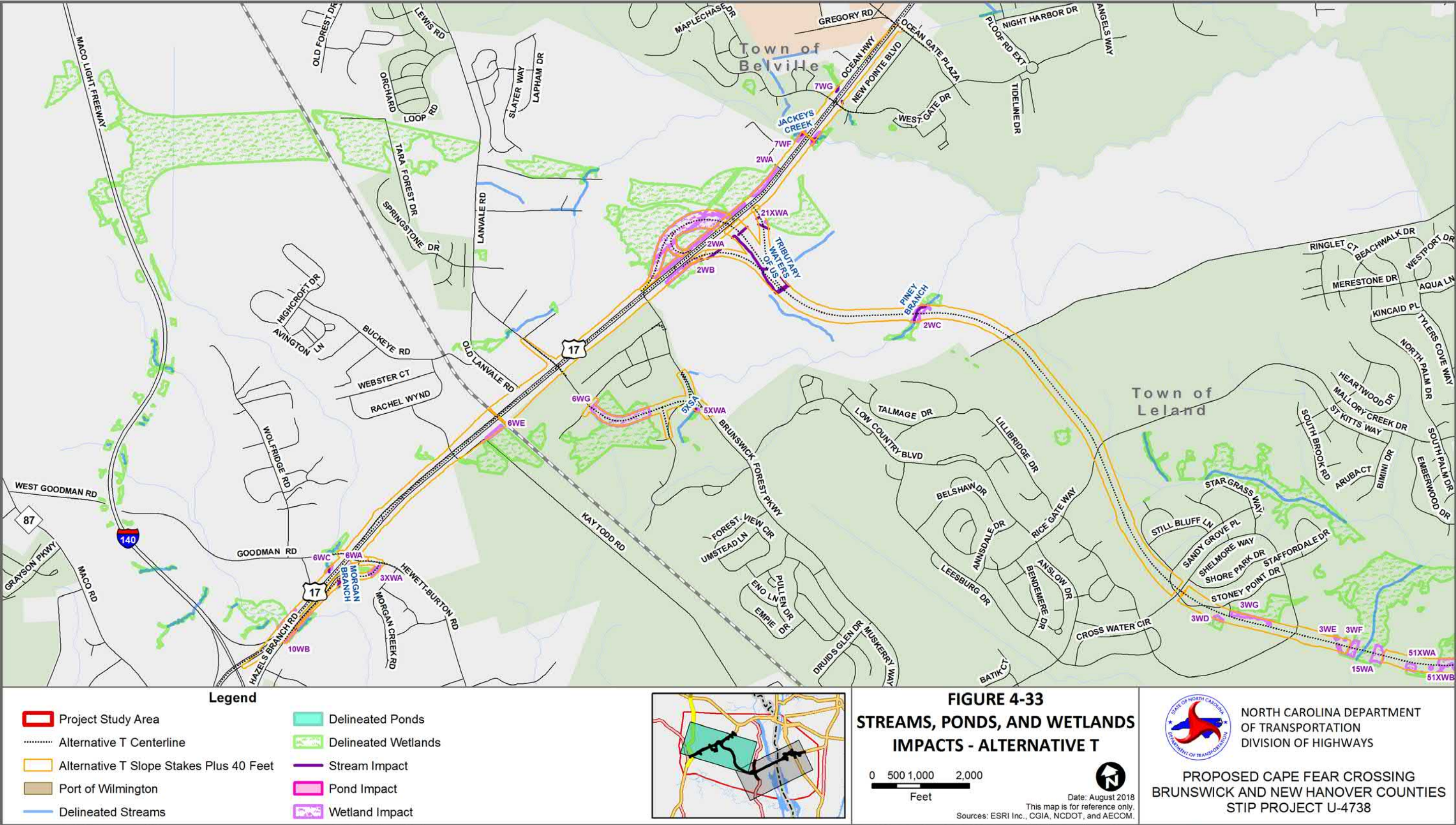


Figure 4-33: Stream, Ponds, and Wetlands Impacts – Alternative T

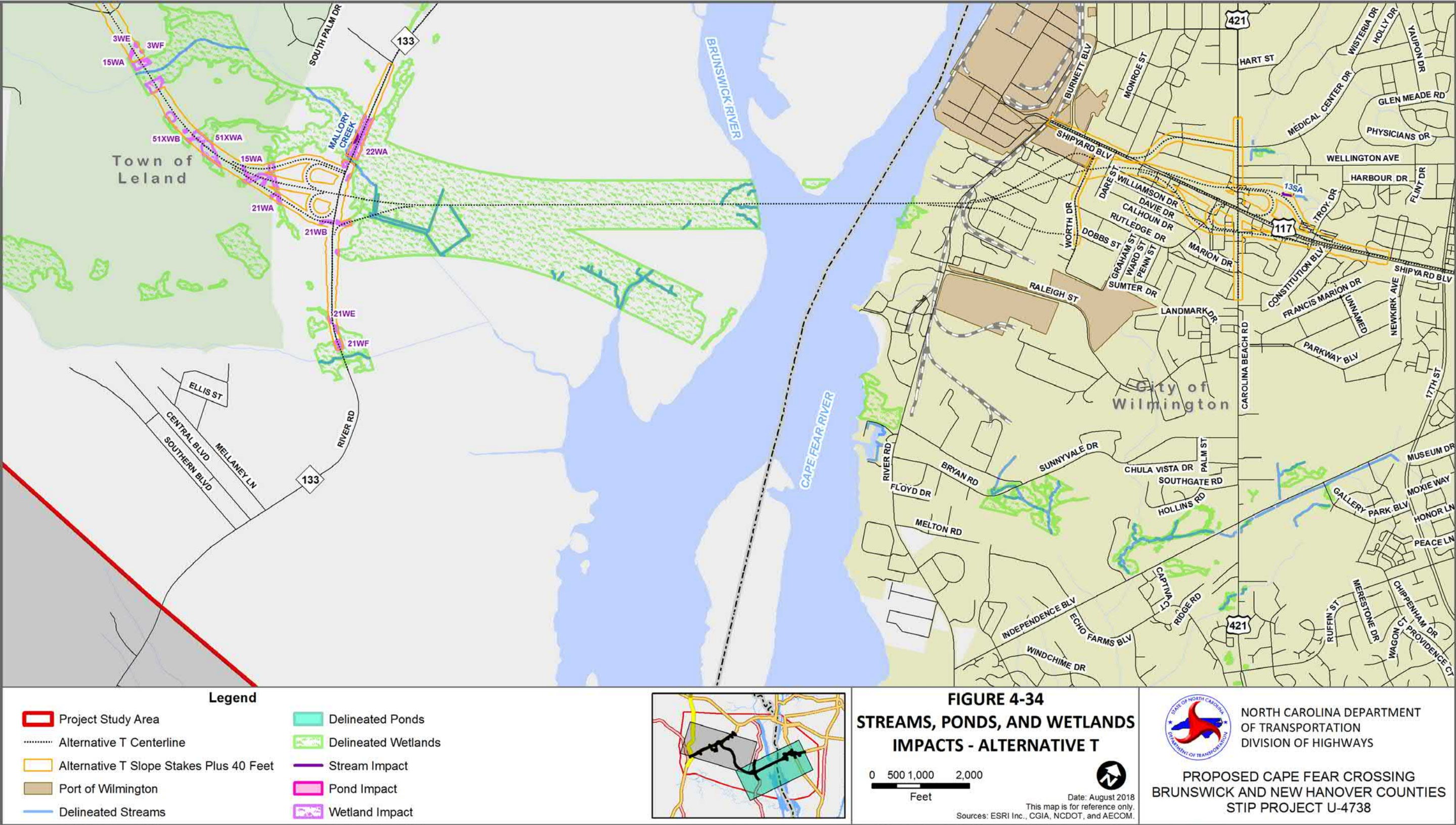


Figure 4-34: Stream, Ponds, and Wetlands Impacts – Alternative T

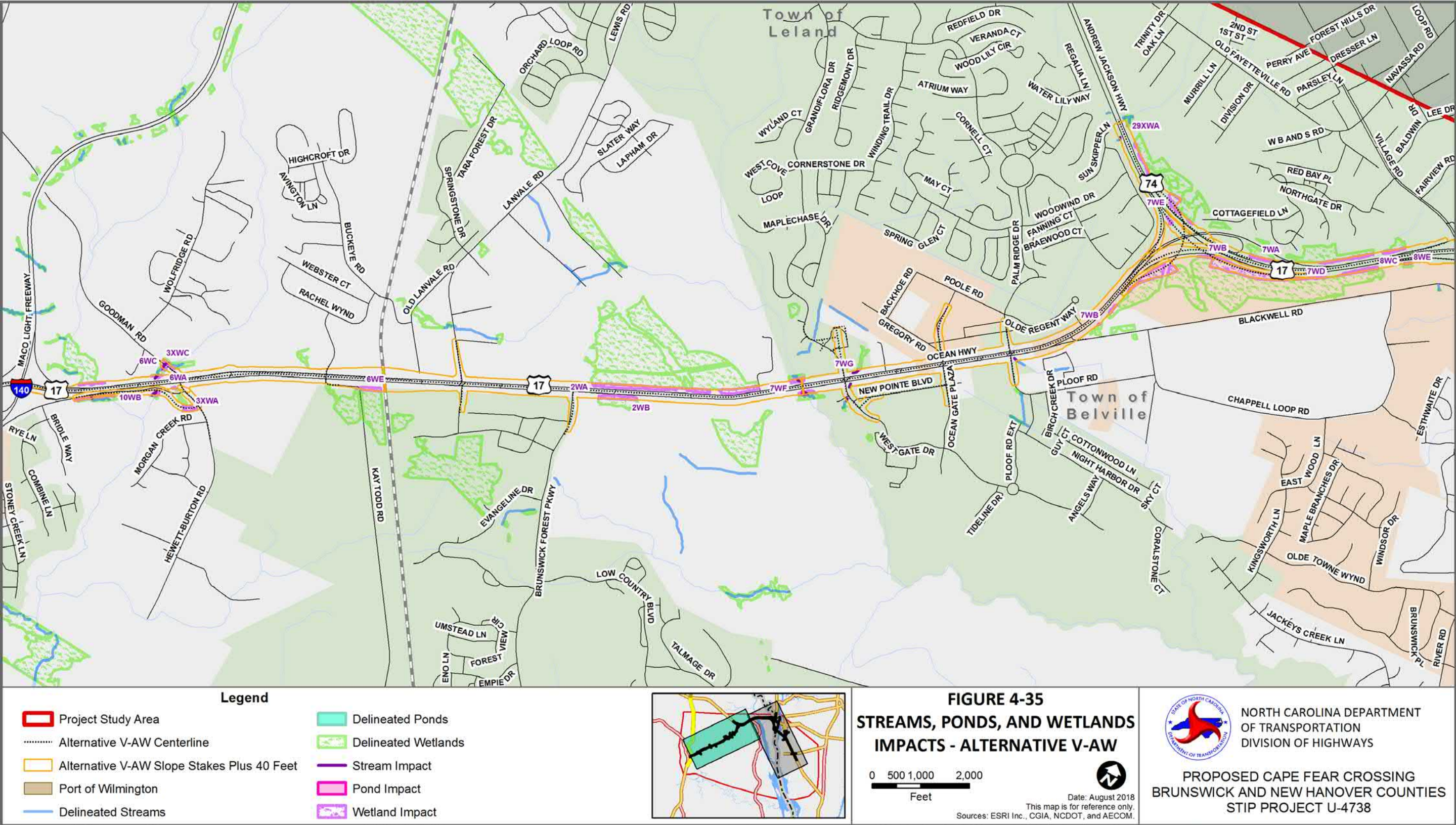


Figure 4-35: Stream, Ponds, and Wetlands Impacts – Alternative V-AW

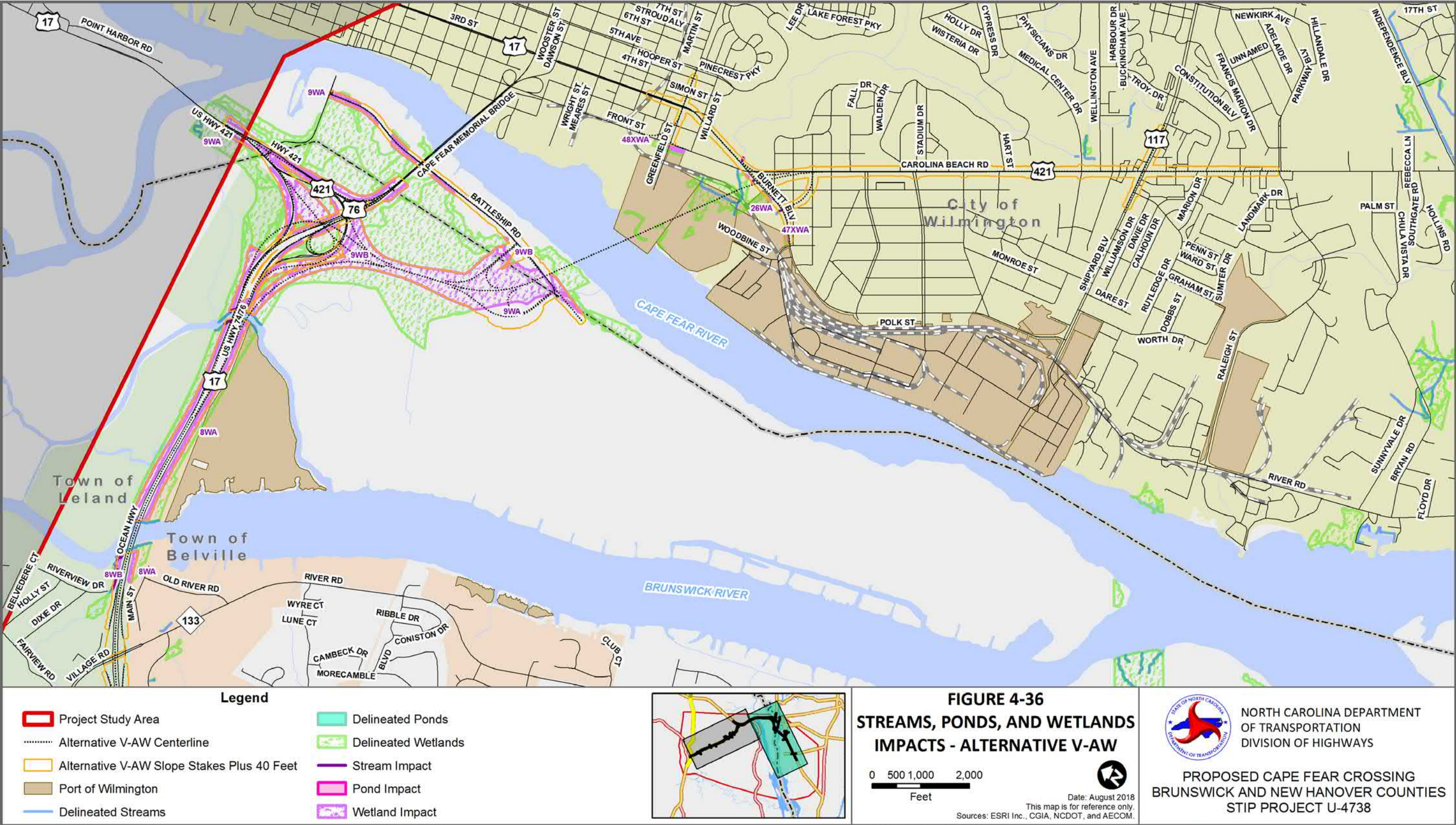


Figure 4-36: Stream, Ponds, and Wetlands Impacts – Alternative V-AW

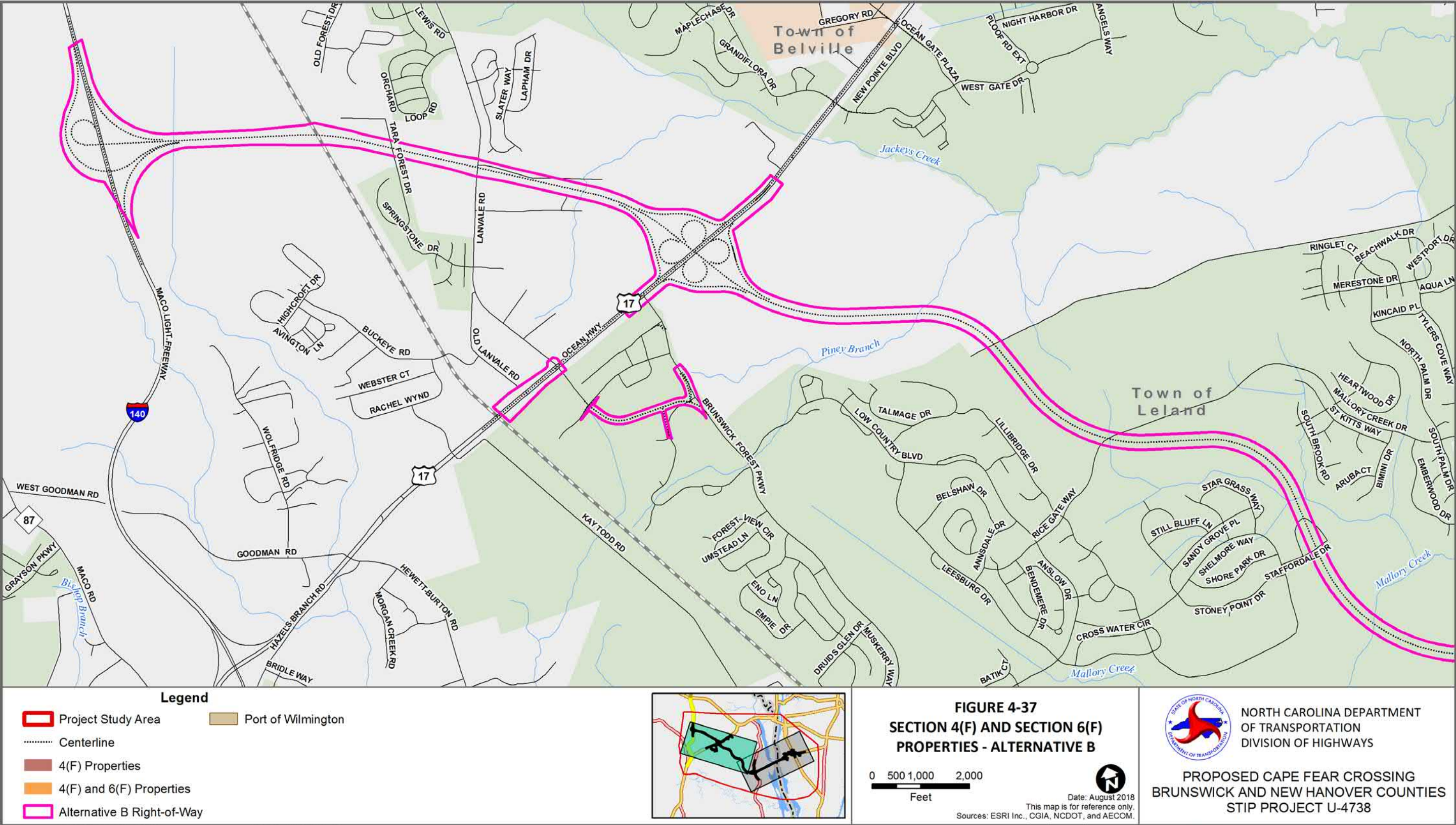


Figure 4-37: Section 4(f) and Section 6(f) Properties – Alternative B

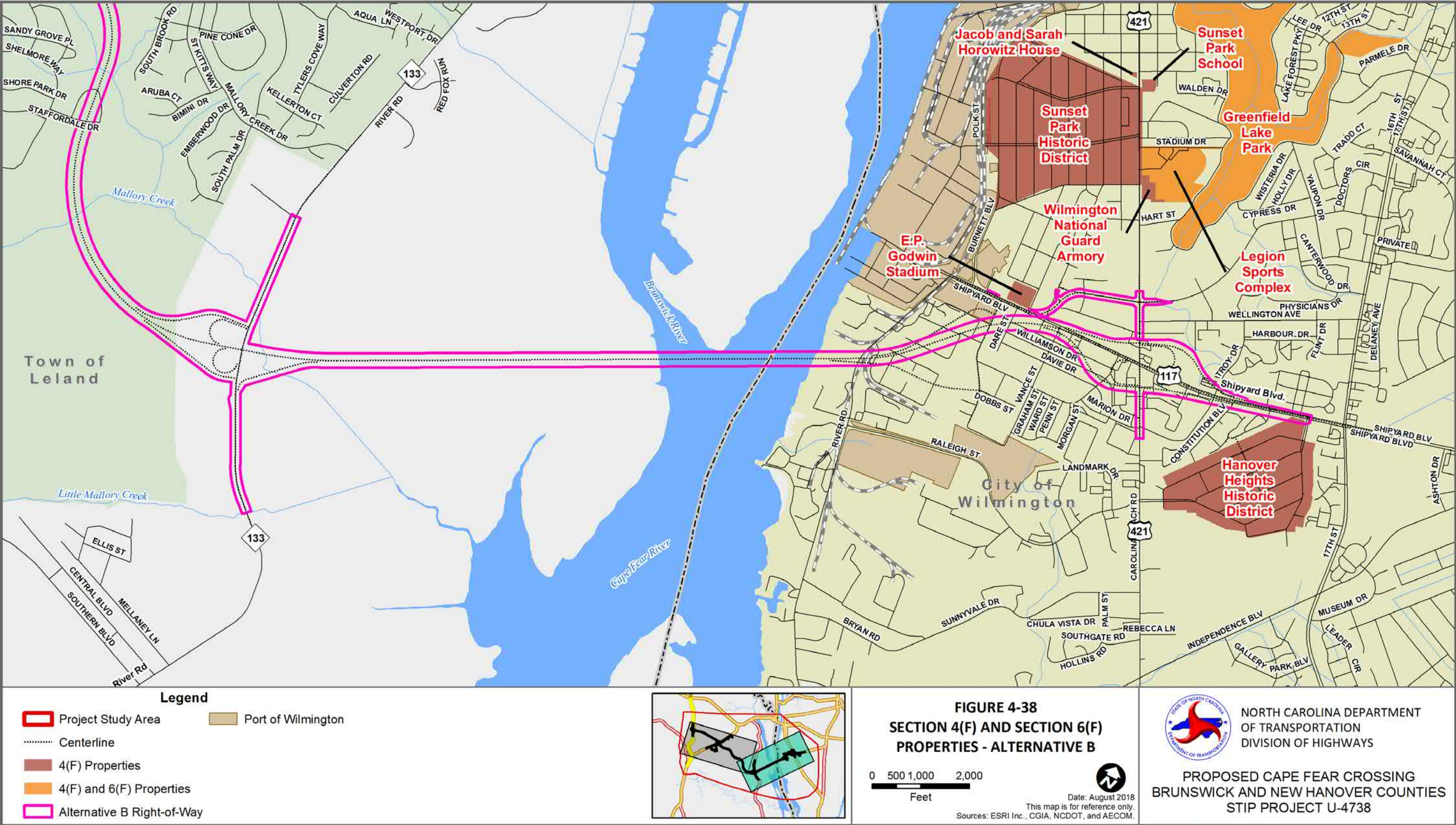


Figure 4-38: Section 4(f) and Section 6(f) Properties – Alternative B

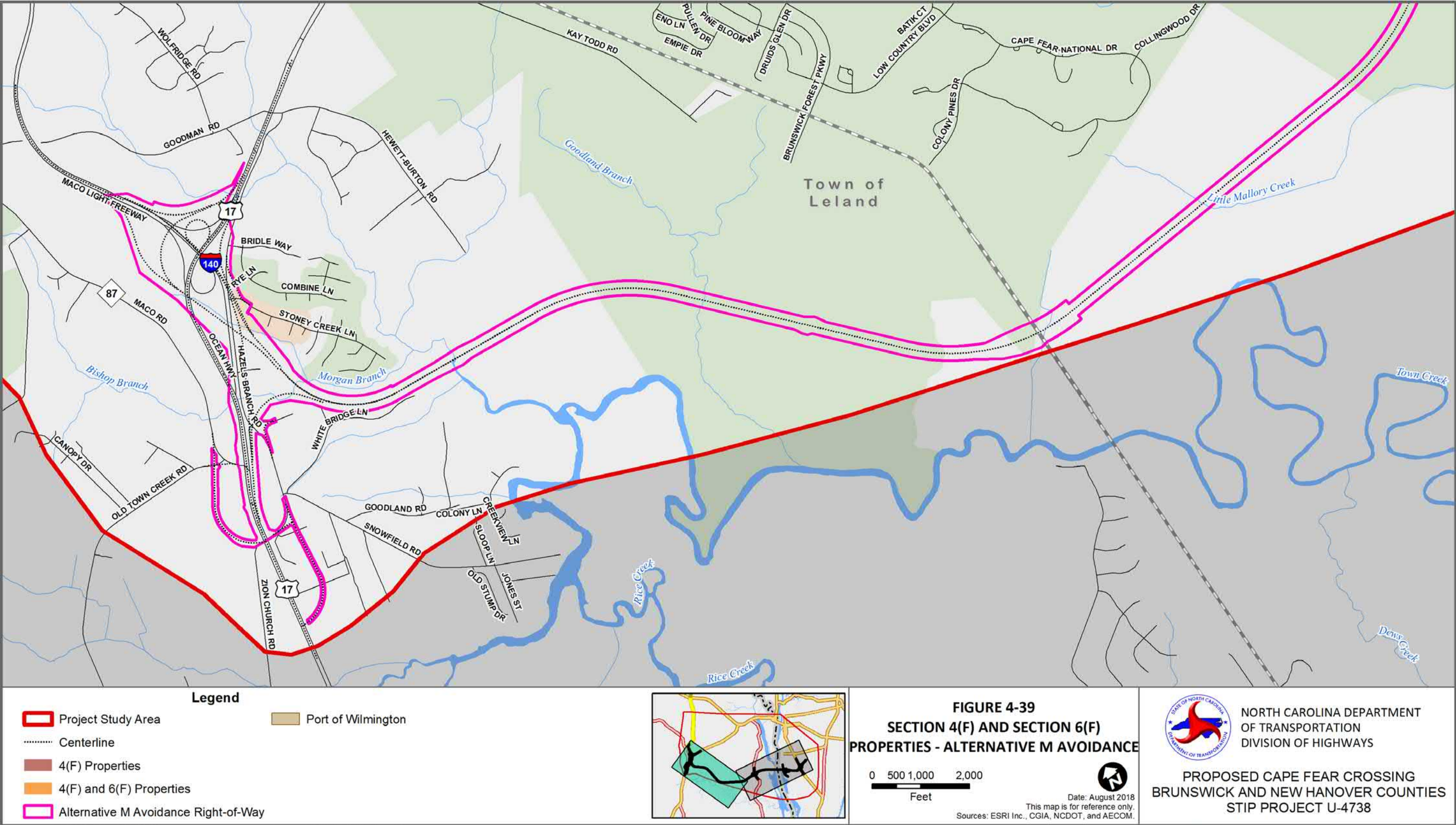


Figure 4-39: Section 4(f) and Section 6(f) Properties – Alternative M Avoidance

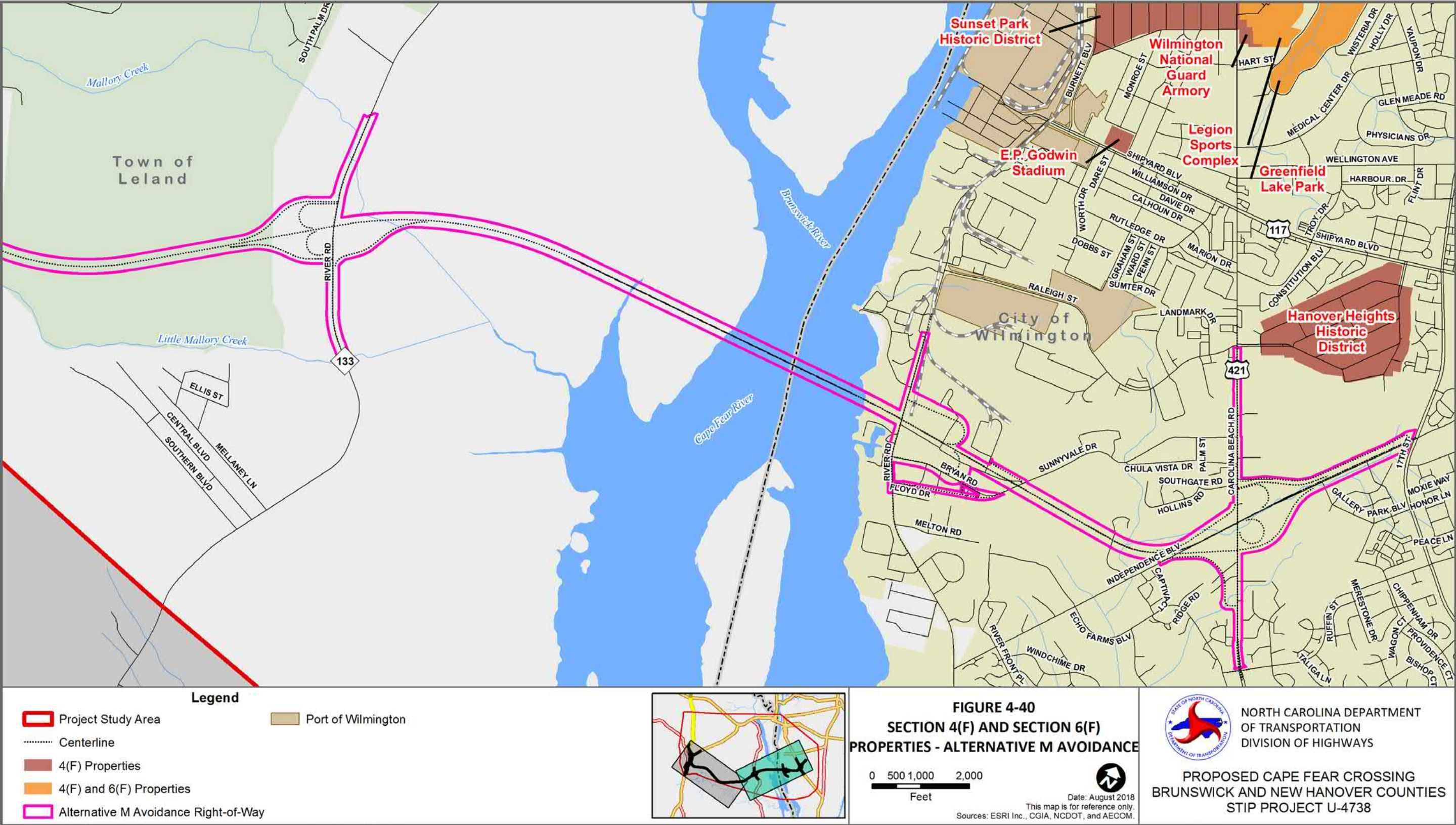


Figure 4-40: Section 4(f) and Section 6(f) Properties – Alternative M Avoidance

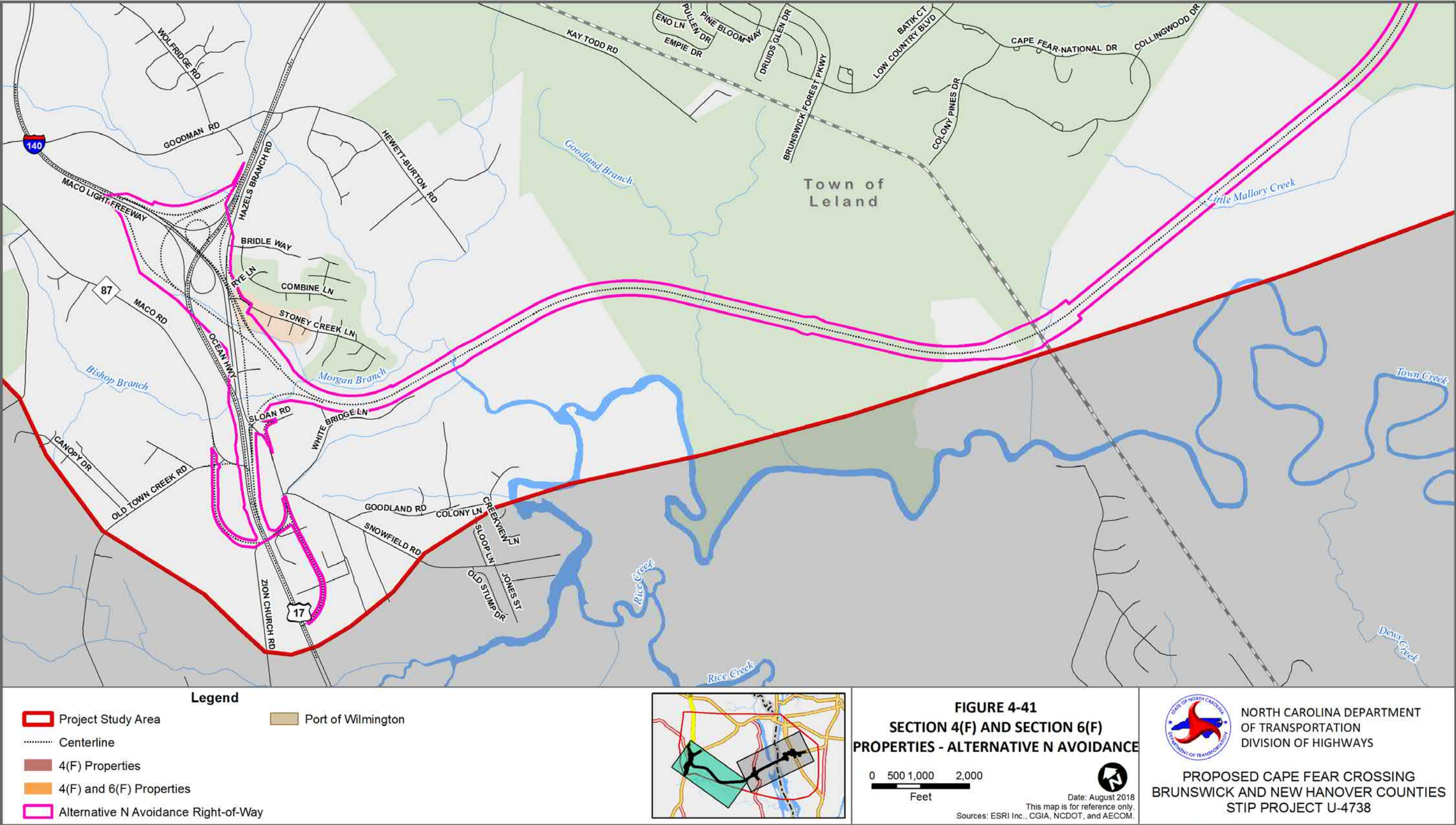


Figure 4-41: Section 4(f) and Section 6(f) Properties – Alternative N Avoidance

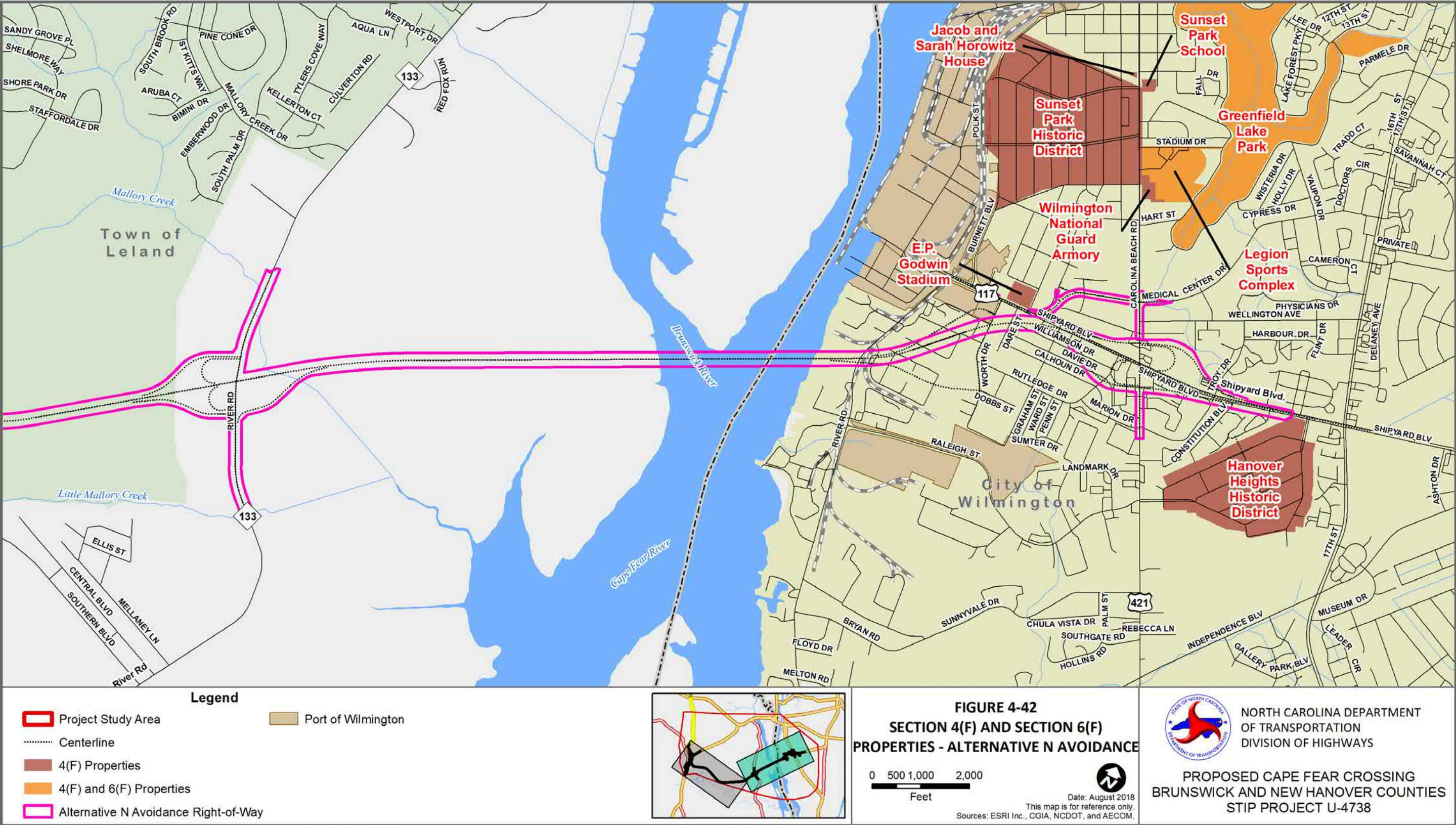


Figure 4-42: Section 4(f) and Section 6(f) Properties – Alternative N Avoidance

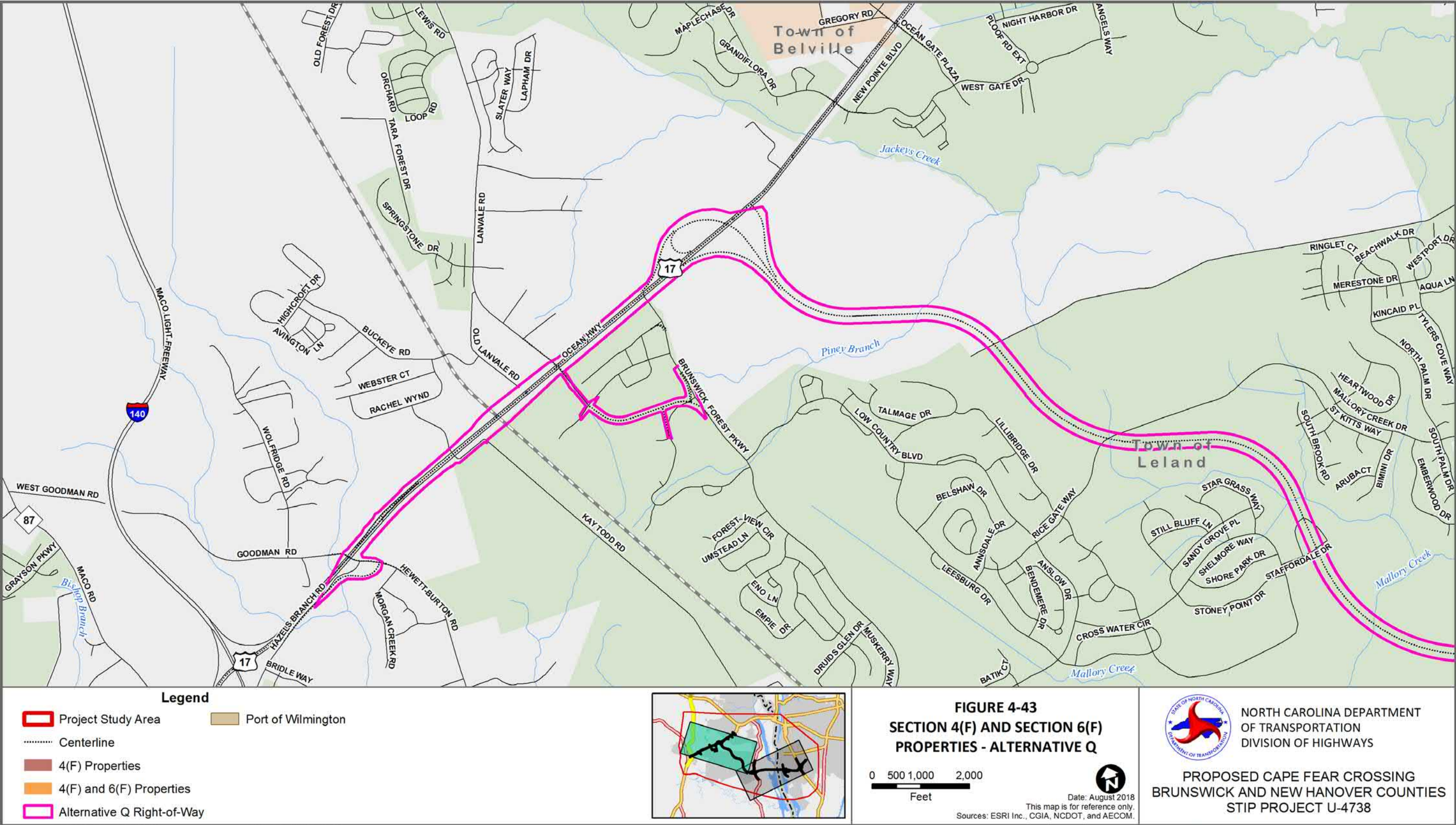


Figure 4-43: Section 4(f) and Section 6(f) Properties – Alternative Q

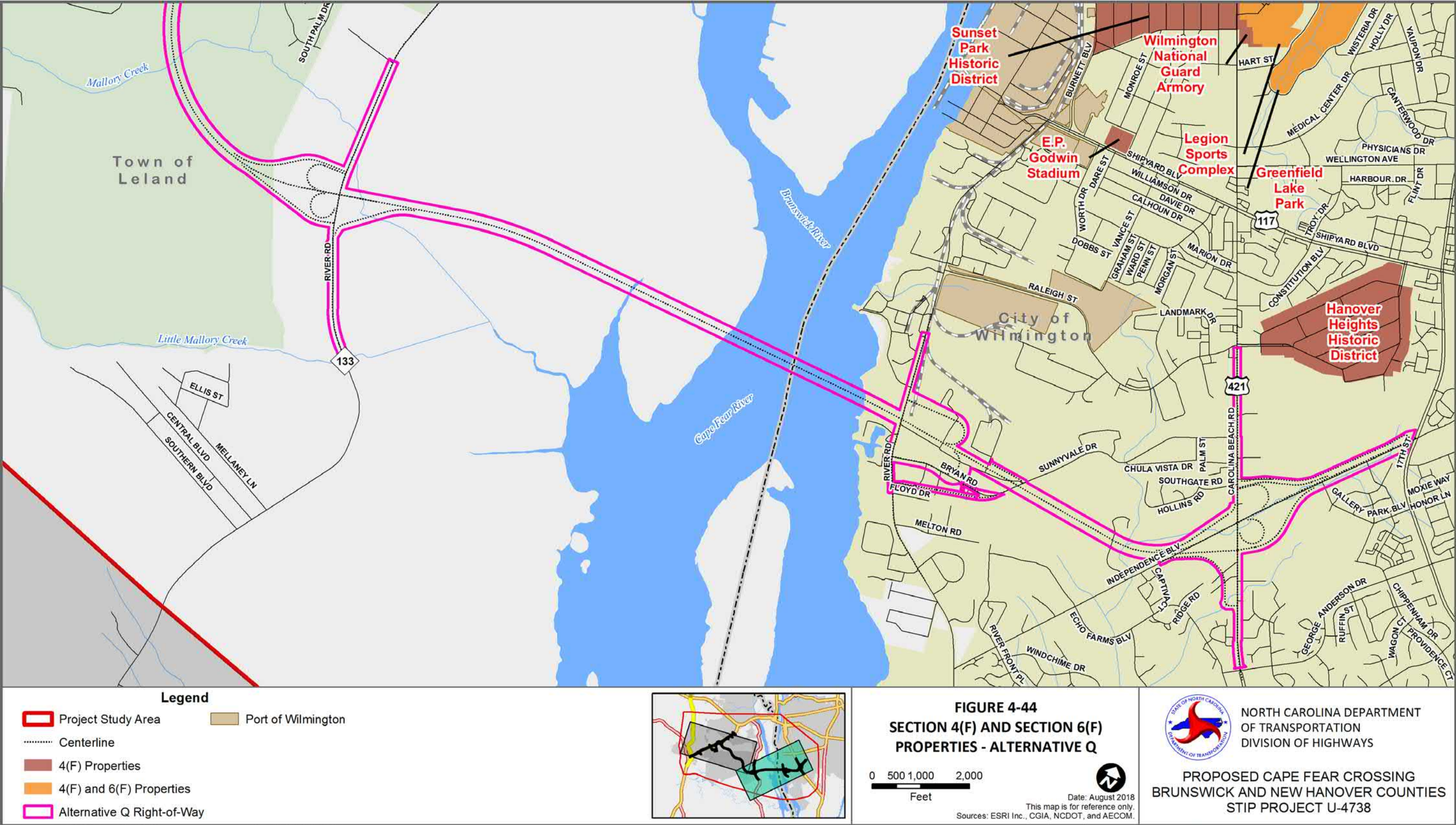


Figure 4-44: Section 4(f) and Section 6(f) Properties – Alternative Q

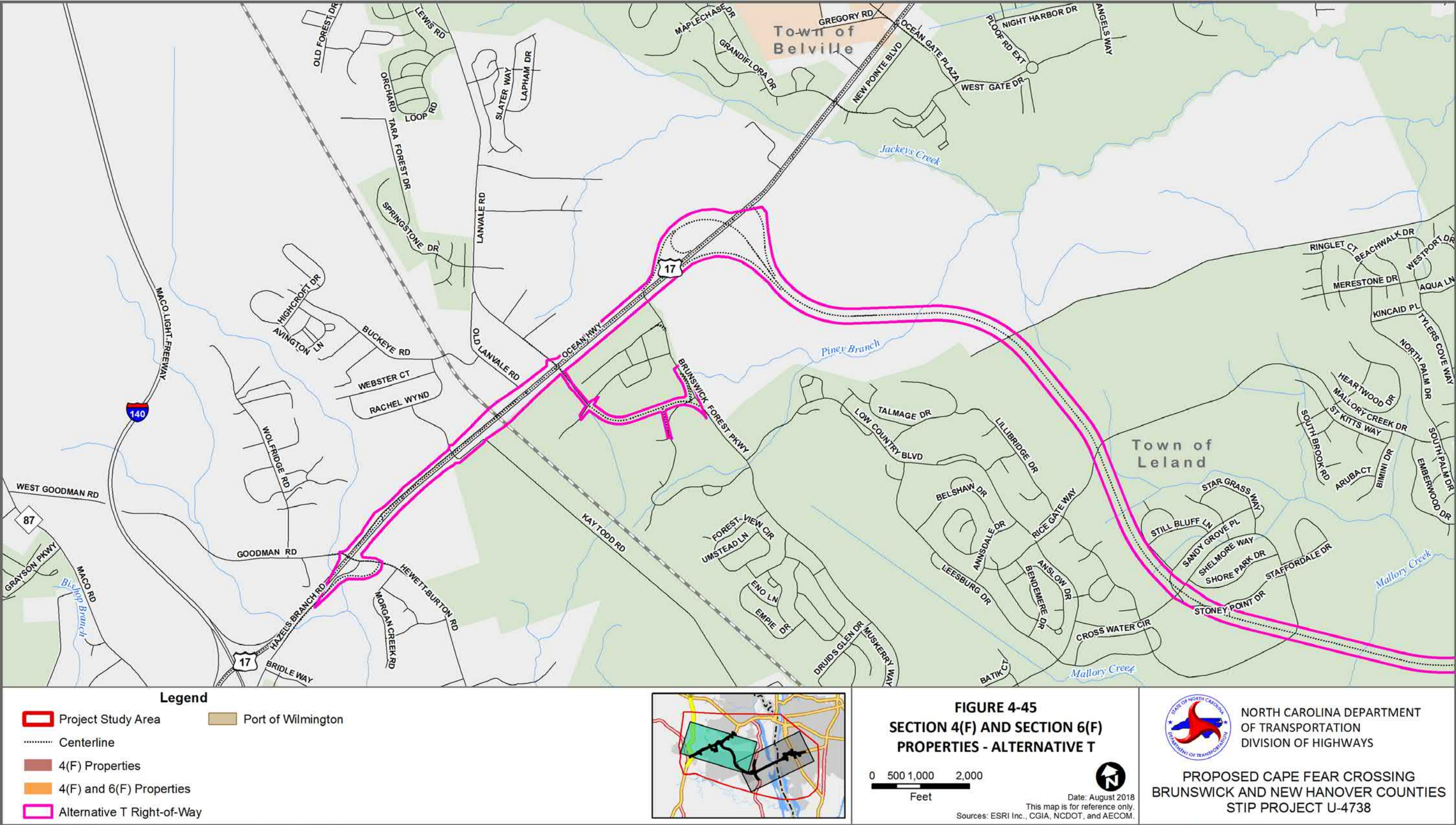


Figure 4-45: Section 4(f) and Section 6(f) Properties – Alternative T

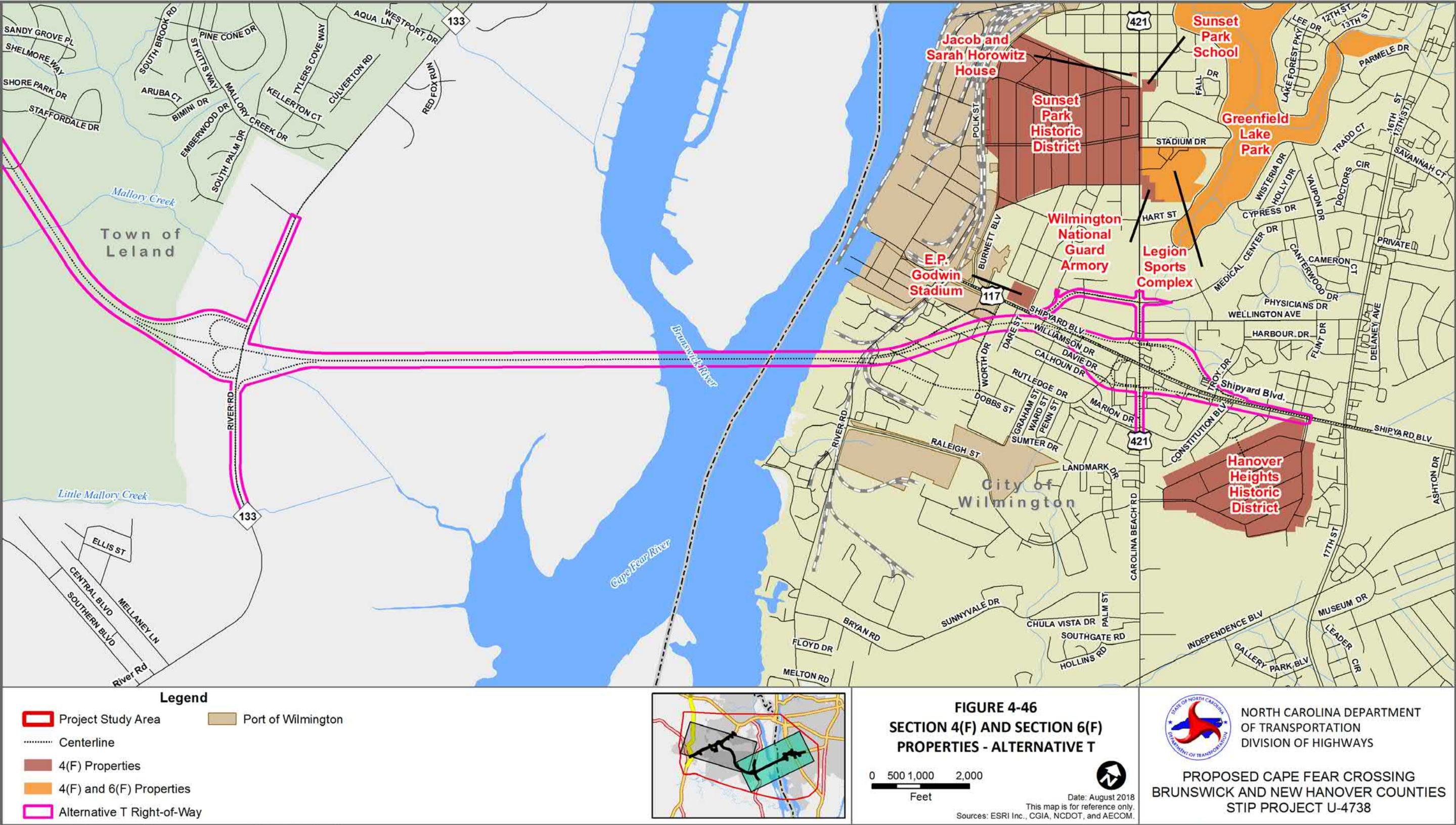


Figure 4-46: Section 4(f) and Section 6(f) Properties – Alternative T

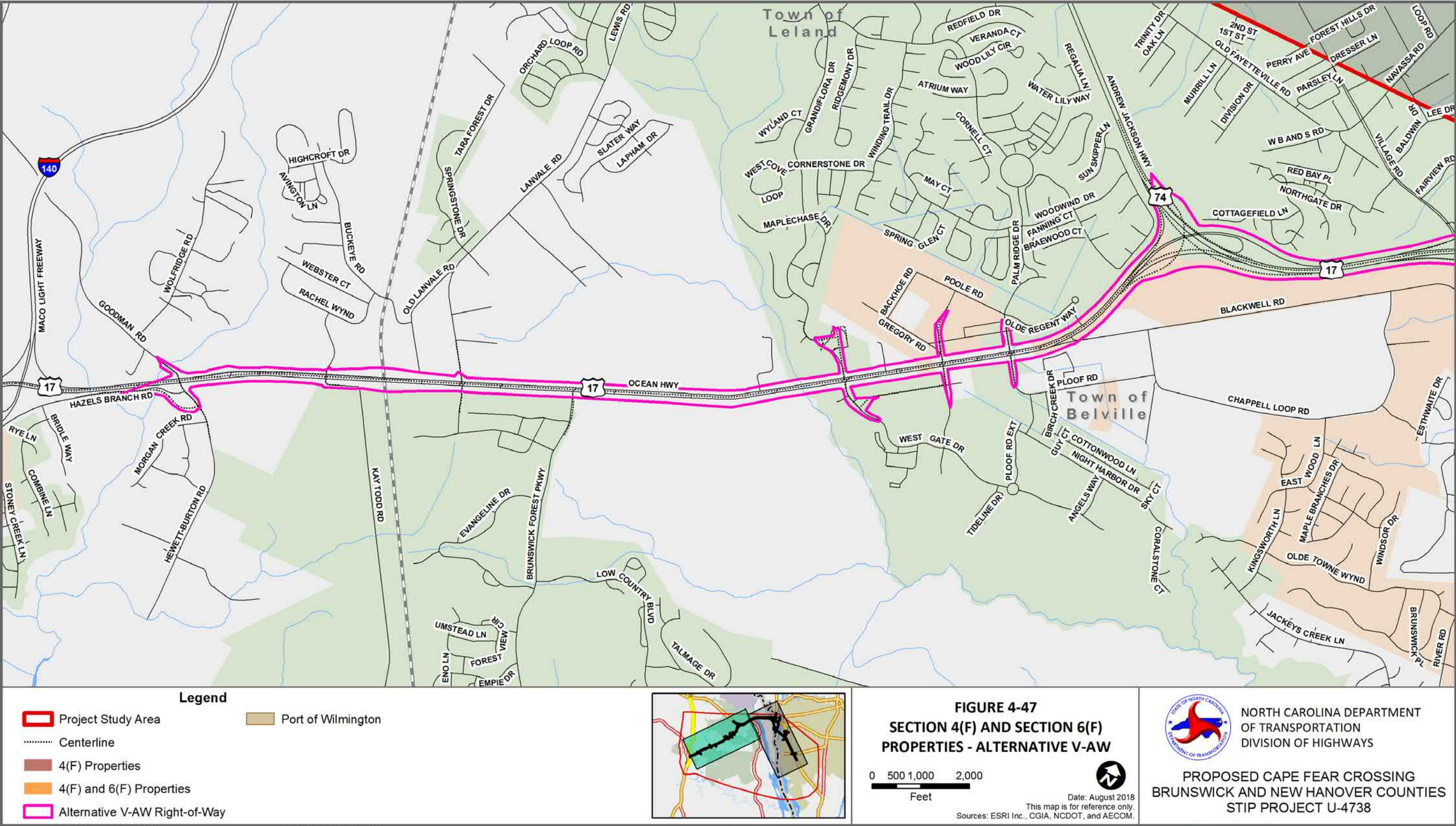


Figure 4-47: Section 4(f) and Section 6(f) Properties – Alternative V-AW

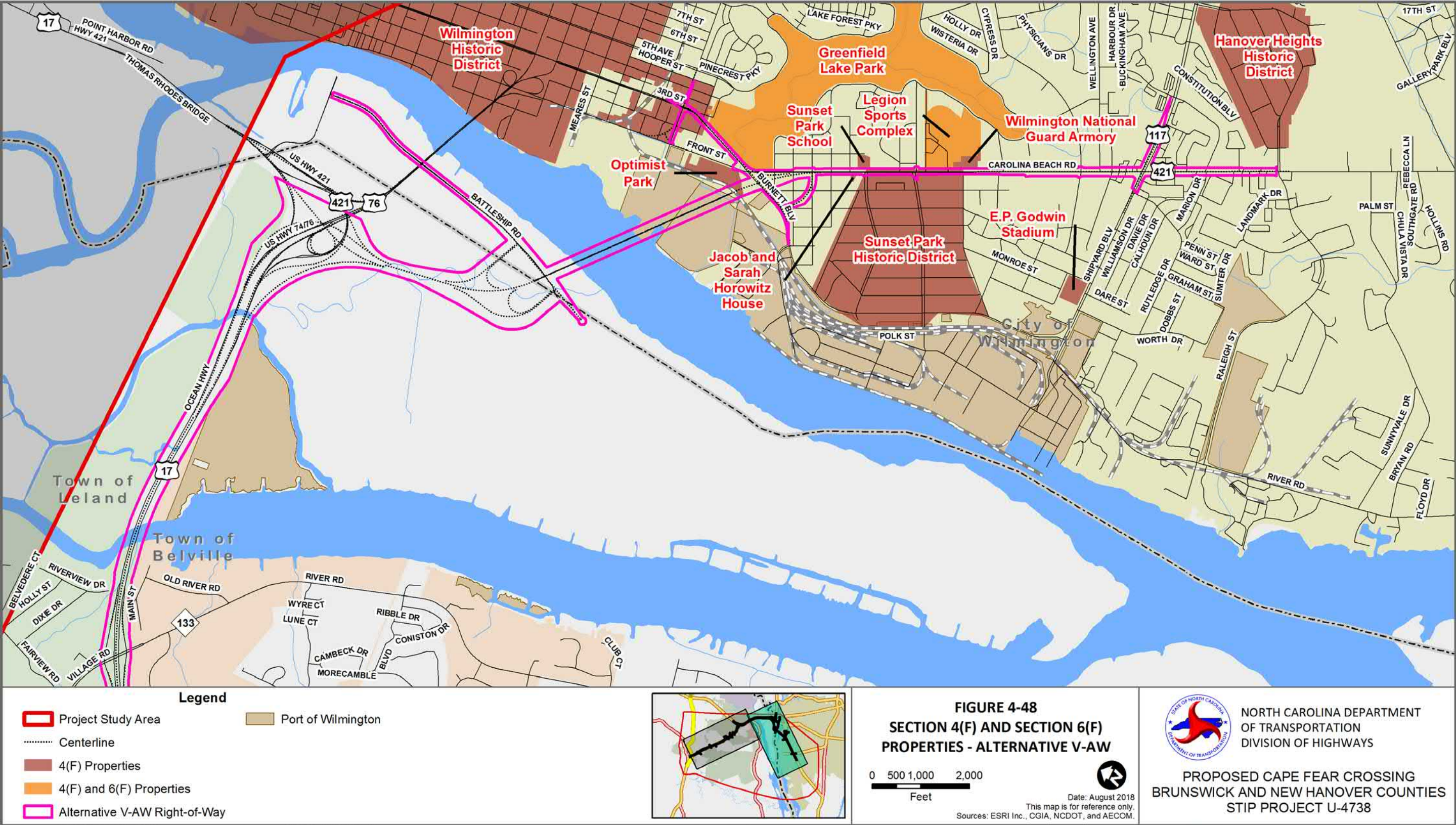


Figure 4-48: Section 4(f) and Section 6(f) Properties – Alternative V-AW

5 AGENCY COORDINATION AND PUBLIC INVOLVEMENT

This chapter summarizes the coordination efforts with federal, state, and local agencies and the public throughout the environmental documentation process for the proposed project.

5.1 Agency Coordination

The proposed project was coordinated with the appropriate federal, state, and local agencies. Comments and concerns received throughout the project development process are incorporated into this document.

5.1.1 Issuance of Scoping Letter and Notice of Intent

A project scoping letter announcing the start of the proposed Cape Fear Crossing (U-4738) project development, environmental, and engineering studies was mailed to federal, state, and local agencies in December 2005. The scoping letter and agency comments received in response to the scoping letter are provided in Appendix E. An agency scoping meeting took place on January 13, 2006, to identify important issues and topics related to the proposed action that should be considered during the study process.

A Notice of Intent to prepare an environmental impact statement was published May 11, 2006, in the Federal Register. The notice advised the public that an environmental impact statement was forthcoming for the proposed project. The notice was submitted to the Office of the Federal Register via the North Carolina Division of the FHWA. A copy of the Notice of Intent is provided in Appendix C.

5.1.2 NEPA/Section 404 Merger Process

Prior to entering the NEPA/Section 404 Merger Process in June 2013, the proposed project was in compliance with Section 6002 of the SAFETEA-LU (23 U.S.C. 139). Section 6002 was used as a means to ensure that the requirements of NEPA and Section 404 of the CWA could be satisfied as part of a single process. The merger process is compliant with Section 6002 and an interagency procedure integrating the regulatory requirements of Section 404 of the CWA into the NEPA and State Environmental Policy Act decision-making process. In order to provide cooperation and coordination during the study process, a project team referred to as the Merger Team was established at the outset of the project.

The agencies represented on the Merger Team include:

- Federal Highway Administration (FHWA)
- US Army Corps of Engineers (USACE)
- North Carolina Division of Water Resources (NCDWR)
- North Carolina Department of Transportation (NCDOT)
- US Environmental Protection Agency (USEPA), Region IV
- US Fish and Wildlife Service (USFWS)
- National Marine Fisheries Service (NMFS)
- Wilmington Metropolitan Planning Organization (WMPO)
- State Historic Preservation Office (HPO)
- North Carolina Wildlife Resources Commission (NCWRC)
- North Carolina Division of Coastal Management (NCDCM)

The NEPA/Section 404 Merger Process includes a series of concurrence points (CPs), which are as follows:

- CP 1: Purpose and Need
- CP 2: Detailed Study Alternatives
- CP 2A: Bridge Locations and Lengths
- CP 3: Least Environmentally Damaging Practicable Alternative (LEDPA)
- CP 4A: Avoidance and Minimization of Impacts
- CP 4B: 30 percent Hydraulic Design
- CP 4C: 100 percent Hydraulic Design and Permit Drawings

The Merger Team has reached concurrence on CP 1, CP 2, and CP 2A. Copies of the concurrence forms are included in Appendix E. The Merger Team will concur on the LEDPA (CP 3) following the public hearing and will concur on further avoidance and minimization measures (CP 4A) following CP 3.

5.1.3 Other Agency Coordination

Table E-1 in Appendix E provides a timeline and summary of agency coordination activities.

5.2 Public Involvement

This section describes the methods that have been used for public outreach, including citizen informational workshops (CIWs), small group meetings, newsletters, and postcards. Appendix D includes the public involvement activities to date.

5.2.1.1 Postcards/Newsletters

A postcard was prepared and mailed to project stakeholders in March 2006, notifying citizens of the upcoming CIWs held on April 10 and April 11, 2006.

Three newsletters have been prepared and mailed to project stakeholders. Newsletter No. 1 was mailed to the project mailing list in March 2011 to notify the public of the upcoming CIWs held on March 22 and

March 24, 2011. Newsletter No. 2 was mailed to the project mailing list in April 2014 to inform citizens of the detailed study alternatives. Newsletter No. 3 was mailed to the project mailing list in December 2018 to inform citizens of the detailed study alternatives eliminated from further consideration and provide a project update. Copies of the postcard and newsletters are included in Appendix D.

5.2.1.2 Telephone Hotline

A telephone number (1-800-233-6315) was published in each newsletter and made available to local organizations and agencies in order to provide immediate response to public concerns and comments.

5.2.1.3 Project Website

NCDOT maintains a project website that is used to provide project information related to public involvement activities (including meetings and newsletters), project map, frequently asked questions, project schedule, study process, and contact information. The website can be found at www.ncdot.gov/projects/cape-fear-crossing.

5.2.2 Citizen Informational Workshops

CIWs were held to present information, answer questions, and receive comments regarding the proposed project. The first CIW consisted of two meetings, one in Brunswick County and one in New Hanover County. The first meeting was held on Monday, April 10, 2006, at Codington Elementary School in Wilmington. The second meeting was held on Tuesday, April 11, 2006, at Belville Elementary School in Leland. NCTA representatives were available in an informal setting to answer questions regarding issues such as the purpose of and need for the project, location of potential alternative study corridors, and future steps in the project development process. The opportunity to submit written comments or questions was provided. The general concerns and comments are summarized as follows:

- In general, there is support for the project.
- The project was not progressing to construction quickly enough.
- The most opposition was from citizens who personally owned property close to the corridor presented in the 2003 feasibility study for the project (NCDOT 2003a). Most of these comments were received from those who live near the eastern and western termini, and expressed concerns related to relocations, property values, traffic impacts on local streets, noise, and air pollution.
- Many citizens believed this is a “political” project and the No-Build Alternative will not be considered seriously.
- During both meetings, participants wanted reassurance that there would be additional opportunities for public input prior to final decisions being made.

The second CIW also consisted of two meetings, one in Brunswick County and one in New Hanover County. The first meeting was held on Tuesday, March 22, 2011, at Belville Elementary School in Leland. The second meeting was held on Thursday, March 24, 2011, at Alderman Elementary School in Wilmington. A newsletter was distributed to approximately 6,500 property owners within the project study area, notifying the public of the meetings. Displays at the workshop included maps of the project study area and preliminary corridor segments, information on the transportation planning process, and

the preliminary purpose of and need for the project. A presentation with an overview of the history of the project, purpose and need, and alternatives considered played continuously during the workshop. A total of 303 people submitted written comments during the comment period using the provided comment forms or via email. Comment forms were distributed at the workshops and were available online to obtain public input on the project study area, identified project needs, purposes, and range of alternatives. Comments and concerns that were frequently stated are listed below:

- Concerns regarding completion of other projects such as I-140 (Wilmington Bypass between US 74/76 and US 17) and US 17 widening between US 74/76 and the Cape Fear Memorial Bridge
- Concerns regarding cost of the project and the amount of tolls
- Opposition to the project in general
- Support for the project due to congestion in area
- Impacts to human environment – most notably area neighborhoods such as Brunswick Forest, Snee Farm, and Stoney Creek
- Opposition to project, yet favor upgrading existing roads such as US 17

5.2.3 Small Group Meetings

Two small group meetings have been held. The first was held with representatives of the Snee Farm, Stoney Creek, and Planters Walk communities on June 26, 2006. Community leaders provided background information about the neighborhoods. A large map of the conceptual Wilmington Bypass interchange at US 17, location of area roads and neighborhood boundaries, and conceptual locations of the proposed project were displayed for representatives. Topics of conversation included the alternatives development process, human and natural impacts analysis, and impact footprint.

The second small group meeting was held with representatives of the National Gypsum Company (NGC), Inc. on March 24, 2011, in Wilmington. New NGC representatives discussed plant operations, financials, and status. They provided positive feedback on the proposed project.

5.2.4 Local Officials Meetings

At various times during the study, meetings have been held for the benefit of local elected bodies. These have coincided with regularly scheduled meetings, such as the Wilmington MPO TAC Board meetings and prior to CIWs.

The first local officials meetings were held on April 10 and 11, 2006, prior to the first CIW. The second meetings were held on March 22 and 24, 2011, prior to the second CIW. These meetings gave the local officials an opportunity to see the materials that would be presented to the public at the CIWs.

Additionally, in January 2013, the WMPO TAC created a sub-committee (Cape Fear Crossing Work Group) to work with NCDOT and to better inform the WMPO TAC with information regarding the merger process and project status. Several meetings were held with the Cape Fear Crossing Work Group before being dissolved on October 28, 2015.

5.2.5 Public Hearing

A public hearing for the proposed project will be held following approval of the DEIS. The alternatives still under consideration for the project will be presented to the public for their comments at the hearing. The preferred alternative for the project will be selected following the hearing. Citizen comments will be taken into consideration in the selection of the preferred alternative. A second hearing will be held following the selection of the preferred alternative to present the proposed design within the recommended corridor.

6 LIST OF PREPARERS AND DEIS DISTRIBUTION

This chapter lists the study team members, their qualifications, and their roles. This chapter also documents the agencies that received a copy of the DEIS for review and comment.

6.1 List of Preparers

This DEIS was prepared by AECOM – North Carolina, consulting engineers, in cooperation with NCDOT and FHWA. The key personnel involved in the preparation of this document are presented in Table 6-1.

Table 6-1: DEIS List of Preparers

Name	Position	Credentials
Federal Highway Administration		
Ron Lucas, PE	Preconstruction & Environment Engineer	27 years of experience in transportation project development. Responsible for development of planning and environmental studies in eastern North Carolina.
North Carolina Department of Transportation		
John Conforti, REM	Project Manager, Project development and document review	31 years of experience including 20 years with NCDOT. Responsible for project management and document review.
Gary Lovering, PE	Roadway	38 years of experience including 29 years with NCDOT. Responsible for review of roadway design.
James Dunlop, PE	Congestion Management Regional Engineer, Eastern Region	30 years of experience including 25 years with NCDOT. Responsible for review of traffic capacity analysis.
Tyler Stanton	Eastern Environmental Program Consultant	20 years of experience including 15 with NCDOT. Aided in review of natural resources studies.
Sarah White	Right-of-way Appraisal	8 years of experience with NCDOT. Responsible for review of right-of-way and associated cost estimate.

Table 6-1: DEIS List of Preparers

Name	Position	Credentials
Herman Huang, PhD	Community Studies	25 years of experience, including 10 years at NCDOT. Responsible for review of community studies.
Paul Atkinson, PE	Hydraulics	28 years of experience including 29 years with NCDOT. Responsible for review of hydraulic design.
AECOM/URS Corporation		
Joanna Rocco, AICP	Project Manager	BS in Biology and MS in Environmental Studies with 15 years of experience in NEPA and environmental planning.
Celia Miars, AICP	Deputy Project Manager	BS in Design and MA in Environmental Studies with 7 years of experience in NEPA and environmental planning.
Ed Edens, PE	Transportation Engineer	BS in Civil Engineering with over 20 years of experience in planning and roadway design projects.
Neil Dean, PE	Transportation Engineer	BS in Civil Engineering with over 20 years of experience in planning projects and roadway design.
Andrew A. Bell, PE, PTOE	Transportation Engineer	BS in Civil Engineering with more than 9 years of experience in traffic engineering and air and noise analysis.
Meme Buscemi, PE	Hydraulic Project Engineer	BA in Biology, BS in Biological and Agricultural Engineering and MCE in Civil Engineering with 11 years of experience in hydraulic engineering.
Kory Wilmot, AICP	Project Manager/ Urban Planner; document reviewer	Masters of Public Administration, BA in Urban and Regional Planning with 16 years of experience in NEPA documentation.
Todd McAulliffe, AICP	Planner/GIS; lead GIS reviewer	MA in Geography with 15 years of experience in GIS analysis, transportation, and urban planning.
Robin Marshall	Senior Technical Editor/Writer	BS in English; 28 years of experience.
HNTB		
Tracy Roberts, AICP	GEC Project Manager	MPA in Public Administration with 18 years of experience in NEPA documentation, air quality/traffic noise analyses, and public involvement.

Table 6-1: DEIS List of Preparers

Name	Position	Credentials
Calyx/Mulkey		
Mark Mickley	Environmental Scientist	BS in Biology with over 10 years of experience in natural resource investigations.
Christopher Dustin	Environmental Technician	BS in Environmental Science with 8 years of experience in natural resource investigations.
J.H. Carter & Associates, Inc.		
Jan Goodson	RCW Assessment	BS in Wildlife and Fisheries Science with 29 years of experience in documentation, assessment, and monitoring of threatened and/or endangered species.
Atkins		
Don Lewis, AICP	Hurricane Evaluation Analysis	MS in Planning with 38 years of experience in evacuation planning and hurricane evacuation analysis.
MAEC		
Webb White	Utility Analysis	BS in Agricultural Business Management with over 20 years of experience in utility coordination.

6.2 DEIS Distribution

In order to facilitate review and comment, the following agencies, local officials, and public libraries were provided copies of this document.

6.2.1 Federal Agencies

- Advisory Council on Historic Preservation
- Ecology and Environmental Conservation Office
- Federal Aviation Administration
- Federal Emergency Management Agency
- Federal Railroad Administration
- United States Department of Agriculture
- United States Department of Health and Human Services, Office of Environmental Affairs
- United States Department of the Interior
- United States Department of Transportation
- United States Environmental Protection Agency (Region IV, Environmental Review Branch)
- United States Geological Survey

6.2.2 Regional Offices

- Department of Housing and Urban Development
- Federal Emergency Management Agency
- Federal Energy Regulatory Commission
- General Services Administration
- United States Army Corps of Engineers – Wilmington District
- United States Department of Agriculture, Forest Service
- United States Environmental Protection Agency
- United States Fish and Wildlife Service

6.2.3 State Agencies

- North Carolina Department of Administration – State Clearinghouse
- North Carolina Department of Commerce – Travel and Tourism Division
- North Carolina Department of Cultural Resources
- North Carolina Department of Economic and Community Development
- North Carolina Department of Environmental Quality
- North Carolina Department of Human Resources
- North Carolina Department of Transportation – Division 3 Board Member
- North Carolina Department of Transportation – Division 3 Engineer
- North Carolina Department of Public Instruction
- North Carolina Division of Water Resources
- North Carolina Historic Preservation Office
- North Carolina Wildlife Resources Commission

6.2.4 Local Governments and Agencies

- Cape Fear Regional Planning Organization
- City of Wilmington
- City of Wilmington Parks and Recreation Department
- Mayor, City of Wilmington
- Town of Leland
- Town of Navassa
- Wilmington Metropolitan Planning Organization
- Wilmington Public Services Department

6.2.5 Interest Groups

- Brunswick Forest
- Historic Wilmington Foundation
- Residents of Old Wilmington

6.2.6 Public Libraries

State Library of North Carolina
109 East Jones Street
Raleigh, North Carolina 27601

Northeast Regional Library
1241 Military Cutoff Road
Wilmington, North Carolina 28405

New Hanover County Public Library – Myrtle Grove Branch
5155 S College Road
Wilmington, North Carolina 28412

Pleasure Island Branch Library
1401 N Lake Park Boulevard #72
Carolina Beach, NC 28428

New Hanover County Public Library – Main Branch
201 Chestnut Street
Wilmington, North Carolina 28401

Leland Library
487 Village Road NE
Leland, North Carolina 28451

Brunswick County Library
109 W Moore Street
Wilmington, North Carolina 28461

William Madison Randall Library
5162 Randall Drive
Wilmington, North Carolina 28403

6.2.7 Website

www.ncdot.gov/projects/cape-fear-crossing

All technical studies for the project can be accessed via the project website.

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APPENDIX A: AGENCY CORRESPONDENCE

Appendix A1: Correspondence from Federal Agencies

Correspondence from Federal Agencies

Date	From	To	General Subject
12/15/2005	URS Corporation	USACE	Environmental surveys
12/15/2005	USACE	URS Corporation	Comprehensive Study and emails between Richard Lawrence
04/26/2006	N/A	USCG	Bridge clearance requirements for a new high-level bridge over the Cape Fear River
05/16/2006	USCG	URS Corporation	Assigning the Cape Fear Skyway project to staff
07/14/2006	URS Corporation	USCG	Skyway Cape Fear Bridge Feasibility Study
09/19/2006	URS Corporation	USCG	Skyway Cape Fear Bridge Feasibility Study
07/02/2008	URS Corporation	USCG	Cape Fear River navigational channel and vertical clearance
07/14/2008	URS Corporation	USACE	Cape Fear River navigational channel
07/14/2008	USACE	URS Corporation	Cape Fear River info and maps
08/08/2008	URS Corporation	USACE	Cape Fear River depths
03/02/2009	URS Corporation	USACE	Island 13 Mitigation Site
03/02/2009	USACE	URS Corporation	Island 13 DGN files
03/03/2009	USACE	URS Corporation	Island 13 DGN files
03/03/2009	USACE	URS Corporation	Island 13 files – mitigated areas
10/14/2009	USDOT	NC Turnpike Authority	Cape Fear Skyway: Purpose and Need Statement
03/10/2010	URS Corporation	USACE	Navigation/Bridging issues with replacing Cape Fear Memorial Bridge
03/10/2010	URS Corporation	USACE	Navigation/Bridging issues with replacing Cape Fear Memorial Bridge
03/11/2010	USACE	FHWA	Cooperating agency letter
04/11/2013	NMFS	NCDOT	Agreement to place project in NEPA/Section 404 Merger Process.
04/11/2013	USEPA	NCDOT	Agreement to place project in NEPA/Section 404 Merger Process.
04/11/2013	USACE	NCDOT	Agreement to place project in NEPA/Section 404 Merger Process.
04/11/2013	NCDCM	NCDOT	Agreement to place project in NEPA/Section 404 Merger Process.
06/18/2013	USACE	URS Corporation	U-4738 additional alignments and memo
07/03/2014	USACE	AECOM	Navigational Information for the Cape Fear Crossing Project

Correspondence from Federal Agencies

Date	From	To	General Subject
01/17/2017	NCDOT	USCG	Project status and bridge clearance
10/18/2017	FHWA	USACE	Letter regarding Section 4(f) effects of project alternatives
06/04/2018	USACE	NCDOT	Elimination of Alternative VA



"Kimmel, Richard H SAW"
<Richard.H.Kimmel@saw02.u
sace.army.mil>

12/15/2005 10:03 AM

To "Tina_Randazzo \ (E-mail)"
<Tina_Randazzo@URSCorp.com>

cc

bcc

Subject FW: FW: Cape Fear Skyway Project

History:



This message has been replied to and forwarded.

Good Morning Tina-

I am forwarding email between Richard Lawrence and myself regarding the Skyway project. Although I suggested that you come here to review reports, Richard Lawrence (Chief of the NCDAA Underwater Archaeology Branch) probably has reports on everything we have sponsored and more. In addition to general survey reports, you should probably first review the "Comprehensive Study," a two-volume report compiled by the Underwater Archaeology Unit with financial backing from the Wilmington District. I do not think there are copies left for distribution but you may be able to find a copy through interlibrary loan. Also, note that an annotated copy of your map is attached. The notes will open when you place your cursor over the yellow circles.

RK

-----Original Message-----

From: Richard W. Lawrence [mailto:richard.lawrence@ncmail.net]
Sent: Thursday, December 15, 2005 9:09 AM
To: Kimmel, Richard H SAW
Subject: Re: FW: Cape Fear Skyway Project

The only underwater sites I know about in the overall study area are a couple of barges (possibly rice barges) up Jackeys Creek off the Brunswick River, probably well outside the area of effect. You're right about upland sites, we have a number of recorded sites, particularly on the NH Co. side of the river. It would be a good idea for her to come down and look at maps and files.

Richard

Kimmel, Richard H SAW wrote:

>Hey Richard, Richard-

>

> Here is an email that I received earlier today showing the study area

>for the skyway bridge. I have noted on a saved copy that there are 13

>documented shipwrecks just north of the study area and that the southern end
>of Eagles was surveyed with no sites found. What else would you like to add?

>I am going to note that much of the upland area would be considered moderate
>to high probability for sites, even though she only asked for river related
>resources. I am going to suggest that she come here to see our reports and
>then head your way to review site files, if she wants that much detail at

>this point.

>

>

RK

>

>

>-----Original Message-----

>From: Tina_Randazzo@URSCorp.com [mailto:Tina_Randazzo@URSCorp.com]

>Sent: Wednesday, December 14, 2005 12:36 PM

>To: Kimmel, Richard H SAW

>Subject: Cape Fear Skyway Project

>

>

>Hi Richard,

>

>Attached, please find a very preliminary study boundary for the Cape Fear
>Skyway Project. The boundary is the black line that I have drawn. This
>project is in the preliminary phases where we are identifying what is out
>there in order to avoid sensitive areas when analyzing possible corridor
>alignments.

>

>Basically, we are looking for critical areas to avoid along the Cape Fear
>River to determine a possible bridge location. I'm looking to identify the
>dredging limits of the Cape Fear within the study boundary and any
>associated environmental surveys as well as any underwater archaeological
>surveys that may have been preformed. Also any information on
>environmental effects associated with the dredging would be helpful (for
>example, if any hazardous materials were encountered).

>

>During our conversation this morning, there was mention that the Corps and
>the State have performed several surveys along several portions of the
>river. Assuming some surveys occurred within the study boundary, what would
>be the best way to obtain this information?

>

>Any information that you can provide regarding the Cape Fear River and even
>the rest of the study boundary is greatly appreciated.

>

>(See attached file: Preliminary Study Boundary.pdf)

>

>Thank you.

>

>Tina Randazzo

>Environmental Scientist

>URS Corporation

>1600 Perimeter Park Drive

>Morrisville, NC 27560

>Office Number: 919-461-1100

>Direct Number: 919-461-1459

>Tina_Randazzo@URSCorp.com

>

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Richard W. Lawrence, Branch Head
Underwater Archaeology Branch
P.O. Box 58
Kure Beach, NC 28449
Phone: (910) 458-9042
Fax: (910) 458-4093

NOTE: E-Mail to and from me, in connection with the transaction of public business, is subject to the North Carolina Public Records Law and may be disclosed to third parties.



Skyway Bridge.pdf



"Kimmel, Richard H SAW"
<Richard.H.Kimmel@saw02.usace.army.mil>

12/15/2005 11:26 AM


To <Tina_Randazzo@URSCorp.com>

cc

bcc

Subject RE: FW: FW: Cape Fear Skyway Project

History:

 This message has been replied to.

I have forwarded your request to the other subject experts here and asked them to respond to your request.

-----Original Message-----

From: Tina_Randazzo@URSCorp.com [mailto:Tina_Randazzo@URSCorp.com]

Sent: Thursday, December 15, 2005 11:07 AM

To: Kimmel, Richard H SAW

Subject: Re: FW: FW: Cape Fear Skyway Project

Hi Richard,

Thanks for your help. What you have forwarded is very useful.

In regards to environmental surveys (water quality reports, effects from dredging, etc), were you able to identify if any were performed in the study boundary. If so, does the Corps have a repository or a library for these environmental surveys where I could view them either online or in person?

Tina Randazzo
Environmental Scientist
URS Corporation
1600 Perimeter Park Drive
Morrisville, NC 27560
Office Number: 919-461-1100
Direct Number: 919-461-1459
Tina_Randazzo@URSCorp.com

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"Kimmel, Richard

H SAW"
<Richard.H.Kimmel
@saw02.usace.army
.mil>
12/15/2005 10:03
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>(See attached file: Preliminary Study Boundary.pdf)
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>Tina Randazzo
>Environmental Scientist
>URS Corporation
>1600 Perimeter Park Drive

>Morrisville, NC 27560
>Office Number: 919-461-1100
>Direct Number: 919-461-1459
>Tina_Randazzo@URSCorp.com
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Richard W. Lawrence, Branch Head
Underwater Archaeology Branch
P.O. Box 58
Kure Beach, NC 28449
Phone: (910) 458-9042
Fax: (910) 458-4093

NOTE: E-Mail to and from me, in connection with the transaction of public
business, is subject to the North Carolina Public Records Law and may be
disclosed to third parties.
(See attached file: Skyway Bridge.pdf)

April 26, 2006

Mr. Waverly Gregory
Chief, Bridge Section
US Coast Guard
Federal Building
431 Crawford Street
Portsmouth, VA 23704-5004

Subject: **Bridge clearance requirements for a new high-level bridge over the Cape Fear River**
Cape Fear Skyway transportation project from US 17 near Bishop in Brunswick County to US 421/Independence Boulevard in New Hanover County
North Carolina State Transportation Improvement Program No. U-4738

Dear Mr. Gregory:

The North Carolina Turnpike Authority (NCTA) and the North Carolina Department of Transportation (NCDOT) are proposing to construct a multi-lane facility on new location in Brunswick and New Hanover Counties. Located on the southwest side of the City of Wilmington, the proposed 9.5 mile project would feature several bridges for spanning wetlands and other water bodies, including a high-level bridge over the Cape Fear River. The project would begin at the proposed US 17 Bypass interchange with existing US 17 and traverse in an easterly direction to its eastern terminus at the US 421/Independence Boulevard intersection. The project is programmed for planning and environmental study only in the 2006-2012 NCDOT Transportation Improvement Program (TIP) as TIP No. U-4738. The goal of this project is to serve multiple users, including the Port of Wilmington, the military, marine vessels, commuters, and tourists.

The NCTA and NCDOT have begun the project planning and environmental study process for the proposed project and would



"Heyer, Gary"
<Gary.S.Heyer@uscg.mil>
Sent by:
Gary.S.Heyer@uscg.mil

To <David_Griffin@URSCorp.com>
cc "Gregory, Waverly" <Waverly.W.Gregory@uscg.mil>
bcc

05/16/2006 07:31 AM

Subject RE: Cape Fear Skyway

Good morning Mr.Griffin,

Thank you for the information concerning the Cape Fear Skyway. I will pass your request to Mr.Waverly Gregory who will assign your project to one of our office staff.

We looked foreword to working with you on this project.

Gary Heyer - USCG -Bridge Office

-----Original Message-----

From: David_Griffin@URSCorp.com [mailto:David_Griffin@URSCorp.com]
Sent: Monday, May 15, 2006 4:24 PM
To: Heyer, Gary
Subject: Cape Fear Skyway

Gary -

URS is preparing the EIS for the proposed Cape Fear Skyway, a candidate toll road project near Wilmington, North Carolina. The project begins at US 17 in Brunswick County and extends about 9.5 miles eastward, across the Cape Fear River, ending at US 421 near the Wilmington Port. A map is attached for your reference. The area within the "red" line is our study area. The "dark blue" line is an alignment studied at the feasibility study level in 2003.

The project will involve a crossing of the Cape Fear River; therefore, we would like to initiate discussions with the Coast Guard regarding requirements associated with this crossing.

I am not sure if you are the appropriate person for this, please forward as appropriate if you are not. Tracy Roberts at HNTB gave me your name as he worked with you on a bridge project (Alfred Cunningham Bridge) in New Bern.

I have worked with Bill Brazier on the Wilmington Bypass project.

At any rate, I would like to schedule a meeting, or even a teleconference call to discuss the project and river crossing requirements.

Please let me know of a few dates/times when you are available so we can schedule. Again, please forward this information to another Coast Guard representative if you are not the proper point of contact.

Thanks you.

(See attached file: Project Study Area Map.pdf)

David A. Griffin, CEP
Vice President

Manager, Environmental Planning & Analysis Group URS Corporation 1600
Perimeter Park Drive Morrisville, North Carolina 27560 Office phone:
919/461-1100
Direct: 919/461-1446
Cell: 919/345-9924
Fax: 919/461-1415
e-mail: david_griffin@urscorp.com

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message in error or are not the intended recipient, you should not
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distribute, disclose or use any of this information and you should
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the e-mail and any attachments or copies.



1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1415

RECORD OF TELEPHONE CONVERSATION

DATE: 7/10/06		PROJECT NO. 31825110	
RECORDED BY: Kiersten Giugno		OWNER/CLIENT: NCTurnpike Authority	
TALKED WITH: Bill Brazier		FROM: Kiersten Giugno	
NATURE OF CALL (INCOMING OR OUTGOING) Outgoing			
ROUTE TO: Project File	FOR INFORMATION		FOR ACTION
	David Griffin, URS Tracy Roberts, HNTB		
MAIN SUBJECT OF CONVERSATION: Skyway Cape Fear Bridge Feasibility Study			

Per a brief conversation with Gary Heyer (USCG Bridge Management Specialist), Bill Brazier is responsible for representing the USCG on the Skyway Bridge project.

Per a directive by the USACE at a meeting on June 8, 2006, I contacted Brazier to solicit USCG concerns, constraints, and issues with the characteristics of a future bridge crossing the Cape Fear River. Brazier requested I email him a map of the preliminary study area, which was emailed on 7/10/06, and noted that he prefers to visit the area and meet in person to discuss the project.

Brazier agreed to review the map and get back to me to set up a meeting.

(Name and Title)



1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1415

RECORD OF TELEPHONE CONVERSATION

DATE:9/19/06		PROJECT NO. 31825110	
RECORDED BY: Kiersten Giugno		OWNER/CLIENT: NC Turnpike Authority	
TALKED WITH: Bill Brazier		FROM: Kiersten Giugno	
NATURE OF CALL (INCOMING OR OUTGOING) Outgoing			
ROUTE TO: Project File	FOR INFORMATION		FOR ACTION
	David Griffin, URS Tracy Roberts, HNTB		
MAIN SUBJECT OF CONVERSATION: Skyway Cape Fear Bridge Feasibility Study			

Per a directive by the USACE at a meeting on June 8, 2006, I contacted Bill Brazier on July 10, 2006 to solicit USCG concerns, constraints, and issues with the characteristics of a future bridge crossing the Cape Fear River. At that time Brazier requested I e-mail him a map of the preliminary study area, which was e-mailed on 7/10/06, and noted that he prefers to visit the area and meet in person to discuss the project. Brazier agreed to review the map and get back to me to set up a meeting.

As a follow up to the above conversation, on September 19, 2006, I contacted Brazier to arrange a meeting to discuss the USCG's requirements for the proposed Cape Fear Skyway project. Brazier noted that we should "make a proposal" that the USCG could review and comment on. In response, I informed Brazier of the status of the project and that the specifics of the bridge would be evaluated and determined through the environmental review process (NEPA) and that an EIS is being prepared. Brazier noted it would take 2 full days to meet and that he did not have time for this; however, the USCG requirements would need to meet the same requirements as the Cape Fear Memorial Bridge. Brazier noted that this particular bridge is 350 feet wide, opens to an unlimited height capacity, and when closed the constraint is at 65 to 68 feet depending on water levels. (Added note: The Cape Fear Memorial Bridge is a lift span and is limited to about 110' vertical clearance.)

In light of Brazier's time constraints, I informed him that David Griffin may be contacting him for additional information or clarifications and that perhaps a teleconference would be appropriate. Brazier noted that he is available to discuss the project over the phone any time this week.



1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1415

RECORD OF TELEPHONE CONVERSATION

DATE: 7/14/08		PROJECT NO. 31825110	
RECORDED BY: Joanna Harrington		OWNER/CLIENT: NCTurnpike Authority	
TALKED WITH: Jimmy Hargrove		FROM: Joanna Harrington	
NATURE OF CALL (INCOMING OR OUTGOING) Incoming			
ROUTE TO: Project File	FOR INFORMATION		FOR ACTION
	David Griffin, URS Tracy Roberts, HNTB		
MAIN SUBJECT OF CONVERSATION: Cape Fear River navigational channel			

Jimmy Hargrove returned my call in reference to the Cape Fear River navigational channel widths and buffer widths. He said he couldn't find what map was used in the July 2006 meeting, and subsequently forwarded to URS, but he had an updated pdf of the channel. Along with this pdf, he will also forward the dgn files of the river reaches so that we can measure the channel widths and get minimum horizontal clearances for the Cape Fear Skyway bridge.

(Name and Title)



1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1415

RECORD OF TELEPHONE CONVERSATION

DATE: 7/2/08		PROJECT NO. 31825110	
RECORDED BY: Joanna Harrington		OWNER/CLIENT: NCTurnpike Authority	
TALKED WITH: Derek Dossey		FROM: USCG	
NATURE OF CALL (INCOMING OR OUTGOING) Incoming			
ROUTE TO: Project File	FOR INFORMATION		FOR ACTION
	David Griffin, URS Tracy Roberts, HNTB		
MAIN SUBJECT OF CONVERSATION: Cape Fear River navigational channel and vertical clearance			

I spoke to Derek Dossey, Lt. Commander of the USCG branch in Wilmington, to confirm the 165 ft of air draught of the Progress Energy power lines. I also asked if he had any information about the navigational channel widths, and he directed me to the USACE website. He didn't have any files that gave channel widths.

(Name and Title)



1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1415

RECORD OF TELEPHONE CONVERSATION

DATE: 8/08/08		PROJECT NO. 31825110			
RECORDED BY: Joanna Harrington		OWNER/CLIENT: NC Turnpike Authority			
TALKED WITH: Jimmy Hargrove		FROM: Joanna Harrington			
NATURE OF CALL (INCOMING OR OUTGOING) Incoming					
ROUTE TO: Project File		FOR INFORMATION		FOR ACTION	
		David Griffin, URS Tracy Roberts, HNTB			
MAIN SUBJECT OF CONVERSATION: Cape Fear River depths					

I called Jimmy Hargrove of USACE to inquire about any data the USACE may have on Cape Fear River depths. If we are able to get more detailed information about the depth of the river from bank to bank, we can determine the level of impact protection systems required for the bridge.

According to Mr. Hargrove, USACE does not have any data concerning the entire depth of the river. The USACE is only concerned with the navigational channel and its associated buffers. He has a contact at NOAA that he will call for us, and get back to me if he's able to obtain any files of the entire river's depth.

(Name and Title)



"Hargrove, James T SAW"
<James.T.Hargrove@saw02.usace.army.mil>

03/02/2009 03:48 PM

To <susan_shelingoski@urscorp.com>

cc

bcc

Subject Island 13 files

History:



This message has been replied to and forwarded.

Susan,

Attached are Microstation dgn files for the Island 13 Mitigation site located on the Cape Fear River. I hope this information will be helpful. For additional information on the site I recommend you contact Chuck Wilson who is a biologist in our Environmental Section. His phone no. is 910-251-4746.

Jimmy Hargrove
Navigation Branch
Wilmington District, U.S. Army Corps of Engineers
Ph: 910-251-4479
James.t.hargrove@usace.army.mil

<<VT103-013540003AREA1n.dgn>> <<VT103-013540003AREA1n.dgn>>



<<VT103-013540003AREA2.dgn>> VT103-013540003AREA1n.dgn VT103-013540003AREA1n.dgn



VT103-013540003AREA2.dgn



"Hargrove, James T SAW"
<James.T.Hargrove@saw02.usace.army.mil>

03/03/2009 10:53 AM

To <Susan_Shelingoski@URSCorp.com>

cc

bcc

Subject RE: Island 13 files

Susan, you are correct.

Jimmy

From: Susan_Shelingoski@URSCorp.com [mailto:Susan_Shelingoski@URSCorp.com]

Sent: Tuesday, March 03, 2009 10:14 AM

To: Hargrove, James T SAW

Subject: Re: Island 13 files

Thanks Jimmy

I got the files onto our mapping. Just to clarify.....there are two areas that have been excavated (mitigated). One is towards the north of the island and one towards the south. The two areas are not continuous. Is this correct?

Susan Shelingoski, LSSIT, PWS, CPESC
Environmental Scientist
URS Corporation
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
Office phone: 919/461-1100
Direct phone: 919/461-1311
Fax: 919/461-1415
e-mail: susan_shelingoski@urscorp.com

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▼ " height="16">"Hargrove, James T SAW" <James.T.Hargrove@saw02.usace.army.mil>

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03/02/2009 03:48 PM

To<susan_shelingoski@urscorp.com>

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<<VT103-013540003AREA2.dgn>> (*See attached file: VT103-013540003AREA1n.dgn*)(*See attached file: VT103-013540003AREA1n.dgn*)(*See attached file: VT103-013540003AREA2.dgn*)



"Hargrove, James T SAW"
<James.T.Hargrove@saw02.usace.army.mil>

03/03/2009 10:53 AM

To <Susan_Shelingoski@URSCorp.com>

cc

bcc

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Sent: Tuesday, March 03, 2009 10:14 AM

To: Hargrove, James T SAW

Subject: Re: Island 13 files

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Susan Shelingoski, LSSIT, PWS, CPESC
Environmental Scientist
URS Corporation
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
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Direct phone: 919/461-1311
Fax: 919/461-1415
e-mail: susan_shelingoski@urscorp.com

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▼ " height="16">"Hargrove, James T SAW" <James.T.Hargrove@saw02.usace.army.mil>

"Hargrove, James T SAW"
<James.T.Hargrove@saw02.usace.army.mil>

03/02/2009 03:48 PM

To<susan_shelingoski@urscorp.com>

cc

SubjectIsland 13 files

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<<VT103-013540003AREA2.dgn>> (*See attached file: VT103-013540003AREA1n.dgn*)(*See attached file: VT103-013540003AREA1n.dgn*)(*See attached file: VT103-013540003AREA2.dgn*)



"Roberts, Tracy"
<tracy.roberts@ncturnpike.org>
10/14/2009 10:32 AM

To "George.Hoops@dot.gov" <George.Hoops@dot.gov>
cc "Harris, Jennifer" <jennifer.harris@ncturnpike.org>,
"Griffin, David" <david_griffin@urscorp.com>,
"Joanna_Harrington@URSCorp.com"
bcc
Subject RE: Cape Fear Skyway: Purpose and Need Statement

Thanks George.

From: George.Hoops@dot.gov [mailto:George.Hoops@dot.gov]
Sent: Wednesday, October 14, 2009 9:53 AM
To: Roberts, Tracy
Subject: RE: Cape Fear Skyway: Purpose and Need Statement

Tracy,

We have completed our review of the CFS P&N Statement and have the following comments:

1. Last sentence of the last paragraph of Section 1.1: Change "..., and the Section 404(b)(1) Guidelines" to "..., and the Section 404(b)(1) Guidelines of the clean water act."
2. Last sentence of the last paragraph of Section 1.3: Is the following statement correct: "The project is further described as a four-lane, median divided freeway that would include a 225-foot high bridge over the Cape Fear River with 225 feet of vertical clearance."?
3. Section 1.4.1 - Traffic Capacity Deficiencies: We recommend including performance levels from the LRTP. This source defines congestion for us. Also, the documentation needs to provide context for traffic needs from the two counties across the river, explain why travelers want to get from one side to the other, how they get there now, and how the planning process arrived at this new facility in its general location.
4. Section 1.6 – Secondary Benefits: Recommend changing "Data from the hurricane evacuation analysis will be considered when evaluating alternatives, but will not be used as a basis for screening alternatives." to "Data from the hurricane evacuation analysis will be considered when evaluating alternatives, but will not be used as a basis for eliminating alternatives based on P&N."
5. Section 1.9.5 - Commuting Patterns: We could make a stronger argument using O-D survey results rather than census data.
6. Section 1.11.3 - Year 2008 and 2035 No-Build Capacity Analysis: This section should include discussion of the LRTP LOS objective.
7. Table 9 - No-Build Level of Service Summary: Why is this table split? We suggest highlighting the cells that are over the LRTP LOS objective.

8. Table 11 - Future Year (2035) Hurricane Evacuation Clearance Times (No-Build): Why is this table split? We suggest highlighting the cells that are defined by the North Carolina Legislature in 2005 (GS §136-102.7).

Let me know if you have any questions or comments.

Thanks,
George

From: Roberts, Tracy [mailto:tracy.roberts@ncturnpike.org]
Sent: Wednesday, October 07, 2009 5:04 PM
To: Pair, Missy; Hanson, Robert P; Cox, Charles R; York, Shane D; Wasserman, David S
Cc: Harris, Jennifer; Weisenberger, Robert A; Hoops, George <FHWA>; Dewitt, Steve; Wadsworth, John C
Subject: Cape Fear Skyway: Purpose and Need Statement

All:

FHWA convened a series of meetings (three in all) over the last few months to provide assistance in further developing the purpose and need (P&N). FHWA's goal was to look for opportunities to better link the P&N with the Wilmington MPO transportation planning process.

In addition to FHWA staff, the meetings included representatives of NCDOT, Wilmington MPO, NCTA and URS. For background and context, I've provided summaries of two of these meetings. Please note that the summary of the 9/14/09 meeting is still in draft form but should be finalized next week.

We have produced Draft #6 of the P&N based on the outcome of these meetings. The most relevant change from previous drafts is in the purpose statement (Section 1.5). Most other parts are unchanged.

If you need a printed copy of the P&N for your review, I'll arrange to have one delivered.

Please let Jennifer or me know if you have any questions or need additional information.

Thanks
Tracy



1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1415

RECORD OF TELEPHONE CONVERSATION

DATE:3/10/10		PROJECT NO. 31825110	
RECORDED BY: Joanna Harrington		OWNER/CLIENT: NC Turnpike Authority	
TALKED WITH: USACE		FROM: Joanna Harrington	
NATURE OF CALL (INCOMING OR OUTGOING) Outgoing			
ROUTE TO: Project File	FOR INFORMATION		FOR ACTION
	Tracy Roberts, HNTB		
MAIN SUBJECT OF CONVERSATION: Navigation/Bridging issues with replacing Cape Fear Memorial Bridge			

David Griffin and I spoke to Howard Varnam and Justin Arnett of the United States Army Corps of Engineers (USACE) via conference call. The purpose of the discussion was to get feedback from the USACE on navigation and bridging issues of the Cape Fear River in the vicinity of the Port of Wilmington and the existing Cape Fear Memorial Bridge.

David explained that as part of the National Environmental Policy Act process a number of alternatives will be considered for the Cape Fear Skyway project, including the upgrade of existing US 17 Business, and alternatives in the vicinity of existing US 17 Business. This could include a crossing of the Cape Fear River that would replace or possibly in addition to the existing Cape Fear Memorial Bridge. David explained that an evaluation is being made with respect to a possible crossing of the river between the Port and the existing Cape Fear Memorial Bridge.

Howard sent URS a map prior to the call that showed areas on Eagle Island that are owned by USACE and used as disposal sites. These areas are critical for maintaining the disposal area and should not be traversed. He also explained that there is a maintenance facility under the Cape Fear Memorial Bridge owned by the USACE. The parcel just south of that facility is owned by Cape Fear Towing.

David asked about plans to widen the existing navigational channel, and Howard stated that he was not aware of any current plans to widen the channel. There are plans however to deepen the channel. Howard also explained that there is a navigation buffer designated by Congress that restricts piers and bulkheads around 50 feet outside of the channel. Justin noted that the USACE navigational website has a shapefile of this buffer available for download.

Howard recommended that if the Cape Fear Memorial Bridge is replaced, or if a new structure is placed south of the existing bridge, the new bridge should not be lower than 165 feet (the current navigational restriction in place due to the Progress Energy transmission lines).



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
69 DARLINGTON AVENUE
WILMINGTON, NORTH CAROLINA 28403-1343

MAR 11 2010

March 11, 2010

Regulatory Division

SUBJECT: Action ID: 2004 821; Cape Fear Skyway Project, TIP # U-4738

John F. Sullivan, III, P.E.
Division Administrator
Federal Highway Administration
North Carolina Division
310 New Bern Avenue, Suite 410
Raleigh, NC 27601

Dear Mr. Sullivan:

Reference your letter dated February 19, 2010 in which you invited us to participate as a Cooperating agency in the development of the Environmental Impact Statement (EIS) for the proposed transportation improvements between US 17 and future I-140 in Brunswick County to US 421 in New Hanover County, North Carolina. In addition, you have also requested that we take part as a Participating Agency pursuant to Section 6002 of SAFETEA-LU.

In accordance with the Council on Environmental Quality, (40 CFR 1501.6 Cooperating Agencies), we agree to participate as a Cooperating Agency. It is our intention to formally adopt the Federal Highways Administration's National Environmental Policy Act (NEPA) document, in whole or in part, provided it meets our requirements relative to Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and NEPA when the Record of Decision (or Finding of No Significant Impact, as appropriate) is completed. Please note that other program commitments will preclude us from funding or writing any portion of the subject document. However, it is our intention to fully participate in the development of the necessary document throughout the NEPA process. To date it is unclear whether or not the Merger process will be utilized, which is still strongly recommended, but the Corps still fully expects that at the end of the process, that our requirements pursuant to Section 404 of the Clean Water Act, including our Public Interest Review, and Section 10 of the Rivers and Harbors Act are fully satisfied.

Finally, we also agree to Participating Agency status, pursuant to Section 6002 of SAFETEA-LU, and will provide you with issues of concern regarding environmental or socioeconomic impacts as early as possible in the planning process that could substantially delay or prevent our agency from granting a permit for the project.

Thank you for your time and cooperation. Questions or comments may be addressed to Mr. Brad Shaver, Project Manager at the Wilmington Regulatory Field Office, 69 Darlington Ave., Wilmington, North Carolina, 28403, or telephone 910-251-4611.

Sincerely,



Mickey Sugg, Assistant Division Chief
Wilmington Regulatory Division

Copies Furnished:

Ms. Jennifer Harris, P.E. ✓
NCTA Staff Engineer
5400 Glenwood Avenue, Suite 400
Raleigh, North Carolina 27612

Mr. Pete Benjamin
U.S. Fish and Wildlife Service
Fish and Wildlife Enhancement
Post Office Box 33726
Raleigh, North Carolina 27636-3726

Mr. Ron Sechler
National Marine Fisheries Service
101 Pivers Island
Beaufort, North Carolina 28516

Mr. Chris Militscher
U.S. Environmental Protection
Agency
C/O FHWA, Raleigh Office
310 New Bern Avenue, Room 206
Raleigh, North Carolina 27601

Mr. David Wainwright
Water Quality Section
North Carolina Division of Environment
and Natural Resources
1650 Mail Service Center
Raleigh, North Carolina 27699-1650

Ms. Steve Sollod
Division of Coastal Management
1638 Mail Service Center
Raleigh, North Carolina 27699-1638

Rocco, Joanna

From: Sollod, Steve <steve.sollod@ncdenr.gov>
Sent: Thursday, April 11, 2013 10:16 AM
To: Harris, Jennifer; Brad.E.Shaver@usace.army.mil; militscher.chris@epamail.epa.gov; gary_jordan@fws.gov; terrance.a.knowles@uscg.mil; Fritz.Rohde@noaa.gov; Gledhill-earley, Renee; Baker, Jessi E; Wilson, Travis W.; Ayers, Stephanie; Mike.Kozlosky@wilmingtonnc.gov; deggert@capefearcog.org; Herndon, Mason
Cc: ron.lucas@dot.gov; Griffin, David; Rocco, Joanna; Roberts, Tracy; Lane, Stephen; Huggett, Doug
Subject: RE: STIP U-4738, Cape Fear Crossing

Jennifer,

I am still the DCM designated representative for this project. Stephen Lane, our field representative for NCDOT projects in Divisions 2 & 3 will back me up. We have no concerns with placing the project in the merger process and look forward to a meeting in June.

Steve

Steven D. Sollod
Transportation Project Coordinator
NC Division of Coastal Management
919-707-9152

Mailing Address:
1638 Mail Service Center
Raleigh, NC 27699-1638

Physical Address:
512 North Salisbury Street
Archdale Building
12th Floor, Room 1204D
Raleigh, NC 27604

This message is subject to the Public Records Law and may be disclosed to third parties in accordance with Executive Order No. 18.

From: Harris, Jennifer
Sent: Thursday, April 11, 2013 9:32 AM
To: Brad.E.Shaver@usace.army.mil; militscher.chris@epamail.epa.gov; gary_jordan@fws.gov; terrance.a.knowles@uscg.mil; Fritz.Rohde@noaa.gov; Gledhill-earley, Renee; Sollod, Steve; Baker, Jessi E; Wilson, Travis W.; Ayers, Stephanie; Mike.Kozlosky@wilmingtonnc.gov; deggert@capefearcog.org; Herndon, Mason
Cc: ron.lucas@dot.gov; david.a.griffin@urs.com; joanna.rocco@urs.com; Roberts, Tracy
Subject: STIP U-4738, Cape Fear Crossing

Good morning,

It has been a while since we last met, so I'd like to take this opportunity to brief you on the current status of the Cape Fear Skyway (STIP U-4738). The last agency meeting was in May 2011 when we discussed preliminary recommendations for detailed study alternatives. Soon after that meeting, the project was put on hold so that the financial feasibility of the project could be reassessed and so that NCDOT could continue discussions with the Wilmington Urban Area

Metropolitan Planning Organization (WMPO) on the alternatives to be carried forward. The WMPO adopted a resolution on December 12, 2012 (attached) that requested the NCDOT and NCTA continue with the project studies and complete the environmental document, letting the NEPA process determine the optimal solution for meeting the project's purpose and need. Therefore, the project was re-initiated in January of this year. It will now be managed by the NCDOT (and not NCTA) with the same project team, and will be called the Cape Fear Crossing which more accurately reflects the alternatives that will be studied in the DEIS (not only focusing on a Cape Fear Skyway). We are working with our consultant, URS Corporation, to resume studies.

As you know, the project is currently operating under the Section 6002 Coordination Plan, and we would like to seek your agreement with placing the project in the NEPA/Section 404 Merger Process. If so, we plan to meet with you in June to have a joint CP 1 & CP 2 meeting, with the goal of obtaining signatures for both of these concurrence points, which have been previously discussed at TEAC meetings.

Please note that Ron Lucas has assumed George Hoops' role as the FHWA representative for the project. We would also like to request confirmation that the following individuals are the correct representatives for each participating agency:

- USACE – Brad Shaver
- USCG – Terry Knowles
- USEPA – Chris Militscher
- USFWS – Gary Jordan
- NMFS – Fritz Rohde
- NCDCCR – Renee Gledhill-Early
- NCDCEM – Steve Sollod
- NCDMF – Jessi O'Neal Baker
- NCDWQ – Mason Herndon
- NCWRC – Travis Wilson
- NCSPA – Stephanie Ayers
- Cape Fear RPO – Don Eggert
- WMPO – Mike Kozlosky

Please let me know if you have any concerns with placing the project in the Merger Process and whether you'd be willing to consider signing CP 1 and 2 at a Merger meeting in June.

We look forward to working with you again on this project.

Sincerely,
Jennifer Harris

Jennifer Harris, P.E.
Western Region/Turnpike
Project Development Section Head
Project Development & Environmental Analysis Branch
NC Department of Transportation

Physical Address:
Century Center Bldg. A (Door A4 with/without badge or A10 with badge)
1000 Birch Ridge Drive
Raleigh, NC 27610

Mailing Address:
1548 Mail Service Center
Raleigh, NC 27699-1548

Main Phone (919) 707-6000

Rocco, Joanna

From: Shaver, Brad E SAW <Brad.E.Shaver@usace.army.mil>
Sent: Thursday, April 11, 2013 11:11 AM
To: Harris, Jennifer; militscher.chris@epamail.epa.gov; gary_jordan@fws.gov; terrance.a.knowles@uscg.mil; Fritz.Rohde@noaa.gov; Gledhill-earley, Renee; Sollod, Steve; Baker, Jessi E; Wilson, Travis W.; Ayers, Stephanie; Mike.Kozlosky@wilmingtonnc.gov; deggert@capefearcog.org; Herndon, Mason
Cc: ron.lucas@dot.gov; Griffin, David; Rocco, Joanna; Roberts, Tracy
Subject: RE: STIP U-4738, Cape Fear Crossing

I'm it. Yes look forward to meeting in June to continue discussions related to CP 1 and CP 2.

Brad

-----Original Message-----

From: Harris, Jennifer [<mailto:jhharris1@ncdot.gov>]
Sent: Thursday, April 11, 2013 9:32 AM
To: Shaver, Brad E SAW; militscher.chris@epamail.epa.gov; gary_jordan@fws.gov; terrance.a.knowles@uscg.mil; Fritz.Rohde@noaa.gov; Gledhill-earley, Renee; Sollod, Steve; Baker, Jessi E; Wilson, Travis W.; Ayers, Stephanie; Mike.Kozlosky@wilmingtonnc.gov; deggert@capefearcog.org; Herndon, Mason
Cc: ron.lucas@dot.gov; david.a.griffin@urs.com; joanna.rocco@urs.com; Roberts, Tracy
Subject: STIP U-4738, Cape Fear Crossing

Good morning,

It has been a while since we last met, so I'd like to take this opportunity to brief you on the current status of the Cape Fear Skyway (STIP U-4738). The last agency meeting was in May 2011 when we discussed preliminary recommendations for detailed study alternatives. Soon after that meeting, the project was put on hold so that the financial feasibility of the project could be reassessed and so that NCDOT could continue discussions with the Wilmington Urban Area Metropolitan Planning Organization (WMPO) on the alternatives to be carried forward. The WMPO adopted a resolution on December 12, 2012 (attached) that requested the NCDOT and NCTA continue with the project studies and complete the environmental document, letting the NEPA process determine the optimal solution for meeting the project's purpose and need. Therefore, the project was re-initiated in January of this year. It will now be managed by the NCDOT (and not NCTA) with the same project team, and will be called the Cape Fear Crossing which more accurately reflects the alternatives that will be studied in the DEIS (not only focusing on a Cape Fear Skyway). We are working with our consultant, URS Corporation, to resume studies.

As you know, the project is currently operating under the Section 6002 Coordination Plan, and we would like to seek your agreement with placing the project in the NEPA/Section 404 Merger Process. If so, we plan to meet with you in June to have a joint CP 1 & CP 2 meeting, with the goal of obtaining signatures for both of these concurrence points, which have been previously discussed at TEAC meetings.

Please note that Ron Lucas has assumed George Hoops's role as the FHWA representative for the project. We would also like to request confirmation that the following individuals are the correct representatives for each participating agency:

- ⊥ USACE ⊥ Brad Shaver
- ⊥ USCG ⊥ Terry Knowles
- ⊥ USEPA ⊥ Chris Militscher
- ⊥ USFWS ⊥ Gary Jordan
- ⊥ NMFS ⊥ Fritz Rohde
- ⊥ NCDCCR ⊥ Renee Gledhill-Early
- ⊥ NCDCM ⊥ Steve Sollod
- ⊥ NCDMF ⊥ Jessi O'Neal Baker
- ⊥ NCDWQ ⊥ Mason Herndon
- ⊥ NCWRC ⊥ Travis Wilson
- ⊥ NCSPA ⊥ Stephanie Ayers
- ⊥ Cape Fear RPO ⊥ Don Eggert
- ⊥ WMPO ⊥ Mike Kozlosky

Please let me know if you have any concerns with placing the project in the Merger Process and whether you'd be willing to consider signing CP 1 and 2 at a Merger meeting in June.

We look forward to working with you again on this project.

Sincerely,

Jennifer Harris

Jennifer Harris, P.E.

Western Region/Turnpike

Rocco, Joanna

From: Militscher, Chris <Militscher.Chris@epa.gov>
Sent: Thursday, April 11, 2013 9:50 AM
To: Harris, Jennifer; Brad.E.Shaver@usace.army.mil; gary_jordan@fws.gov; terrance.a.knowles@uscg.mil; Fritz.Rohde@noaa.gov; Gledhill-earley, Renee; Sollod, Steve; Baker, Jessi E; Wilson, Travis W.; Ayers, Stephanie; Mike.Kozlosky@wilmingtonnc.gov; deggert@capefearcog.org; Herndon, Mason
Cc: ron.lucas@dot.gov; Griffin, David; Rocco, Joanna; Roberts, Tracy
Subject: RE: STIP U-4738, Cape Fear Crossing

Jennifer: EPA has not identified any concerns with placing the project in the NEPA/404 Merger process. EPA will also be prepared to discuss Purpose and Need and Detailed Study Alternatives to be Carried Forward (CP 1 & 2) with the Merger team in June. Thanks.

Christopher A. Militscher, REM, CHMM
USEPA Region 4 NEPA Program Office
404-562-9512

From: Harris, Jennifer [<mailto:jhharris1@ncdot.gov>]
Sent: Thursday, April 11, 2013 9:32 AM
To: Brad.E.Shaver@usace.army.mil; Militscher, Chris; gary_jordan@fws.gov; terrance.a.knowles@uscg.mil; Fritz.Rohde@noaa.gov; Gledhill-earley, Renee; Sollod, Steve; Baker, Jessi E; Wilson, Travis W.; Ayers, Stephanie; Mike.Kozlosky@wilmingtonnc.gov; deggert@capefearcog.org; Herndon, Mason
Cc: ron.lucas@dot.gov; david.a.griffin@urs.com; joanna.rocco@urs.com; Roberts, Tracy
Subject: STIP U-4738, Cape Fear Crossing

Good morning,

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- USACE – Brad Shaver
- USCG – Terry Knowles

- USEPA – Chris Militscher
- USFWS – Gary Jordan
- NMFS – Fritz Rohde
- NCDCCR – Renee Gledhill-Early
- NCDCCM – Steve Sollod
- NCDMF – Jessi O’Neal Baker
- NCDWQ – Mason Herndon
- NCWRC – Travis Wilson
- NCSPA – Stephanie Ayers
- Cape Fear RPO – Don Eggert
- WMPO – Mike Kozlosky

Please let me know if you have any concerns with placing the project in the Merger Process and whether you’d be willing to consider signing CP 1 and 2 at a Merger meeting in June.

We look forward to working with you again on this project.

Sincerely,
Jennifer Harris

Jennifer Harris, P.E.
Western Region/Turnpike
Project Development Section Head
Project Development & Environmental Analysis Branch
NC Department of Transportation

Physical Address:
Century Center Bldg. A (Door A4 with/without badge or A10 with badge)
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Raleigh, NC 27699-1548

Main Phone (919) 707-6000
Direct Phone (919) 707-6025
Fax (919) 250-4224

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Rocco, Joanna

From: Roberts, Tracy <teroberts1@ncdot.gov>
Sent: Tuesday, January 17, 2017 11:38 AM
To: Thorogood, Michael CIV
Cc: McInnis, Jay; Rocco, Joanna
Subject: RE: Wilmington Bypass/Cape Fear Crossing Current Project Status
Attachments: U-4738, Detailed Study Alternatives.pdf

Michael,

As discussed this morning, attached is the figure from the project website showing the 12 detailed study alternatives for the Cape Fear Crossing project (STIP U-4738). The bridge crossing alternatives north of the Port of Wilmington propose 135 feet of vertical clearance while the bridge crossing alternatives south of the Port propose 187 feet of vertical clearance. FHWA and NCDOT are preparing an Environmental Impact Statement (EIS). Preparation of the Draft EIS is underway. The project has no funding for right of way or construction. Most of the technical studies completed for the project are on the website at <https://www.ncdot.gov/projects/CapeFear/>. Additional studies will be added as they are completed. We also try to keep the website up-to-date on a regular basis.

I am not involved in the Wilmington Bypass project (STIP R-2633 BA & BB), so please feel free to follow up with NCDOT Division 3 staff (Kevin Bowen, Division Construction Engineer) for an update on where the construction stands. I provided his contact information.

We look forward to working with you on the Cape Fear Crossing project. Please feel free to contact us if you have further questions.

Thanks,

Tracy E. Roberts, AICP
Project Development Consultant
Project Development and Environmental Analysis Unit North Carolina Department of Transportation

919 707 2728 office
teroberts1@ncdot.gov

1000 Birch Ridge Drive
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

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-----Original Message-----

From: Thorogood, Michael CIV [<mailto:Michael.R.Thorogood@uscg.mil>]
Sent: Friday, January 13, 2017 3:05 PM
To: Roberts, Tracy <teroberts1@ncdot.gov>

Subject: Wilmington Bypass/Cape Fear Crossing Current Project Status

Good Afternoon Mr. Roberts,

I have relieved Mr. Terry Knowles/Ms. Jessica Shea of this duties regarding the Wilmington Bypass/Cape Fear Crossing bridge construction project. I am following up with you to get the current status of the bridge project.

Also, while I was reviewing our administrative record, I found an inconsistency with our record. In the Permit Transmittal letter dated September 10, 2013, I noticed that in the Bridge Permit (7-13-5) bridge drawings portion you received, you may only have Coast Guard Approval stamped drawing page 1 of 2. In the Bridge Permit (7-13-5), you should have both drawing pages stamped for approval by the US Coast Guard.

Please provide:

1. The current status of the bridge project.
2. Verify that you received both pages of drawings for Bridge Permit (7-13-5)

If you have any questions, please feel free to contact me.

Please provide this information on or before close of business January 18, 2017, if possible.

Thank You for your time.

V/R,

Michael R. Thorogood

USCG 5th District
Bridge Administration Branch
431 Crawford St
Portsmouth, VA 23704
Ph: 757-398-6557
michael.r.thorogood@uscg.mil

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U.S. Department
of Transportation
**Federal Highway
Administration**

North Carolina Division

October 18, 2017

310 New Bern Avenue, Suite 410
Raleigh, NC 27601
(919) 856-4346
(919) 747-7030
<http://www.fhwa.dot.gov/ncdiv/>

In Reply Refer To:
HDA-NC

Mr. Brad Shaver
U.S. Army Corps of Engineers
Wilmington Regulatory Field Office
69 Darlington Ave.
Wilmington, NC 28403-1343

Dear Mr. Shaver:

My staff reviewed the August 17, 2017, merger team handouts and the May 24, 2017, Section 106 concurrence forms for the Cape Fear Crossing project (STIP Project U-4738). The merger team handouts consisted of a comparison of build alternatives in a table format, and the Section 106 concurrence forms documented impacts to historic resources for the Cape Fear Crossing study alternatives.

The table identifies eight alternatives with right-of-way impacts to resources protected under Section 4(f) of the USDOT Act of 1966. The Section 106 concurrence forms identify four alternatives that have an adverse impact to a Section 4(f) resource in which the acquisition of right-of-way from the resource is required.

The Section 4(f) law as described in 23 CFR 774.3 states that "The Administration may not approve the use, as defined in 23 CFR 774.17, of Section 4(f) property unless a determination is made under the following:

(a) The Administration determines that:

- (1) There is no feasible and prudent avoidance alternative as defined in 23 CFR 774.17 to the use of land from the property; and
- (2) The action includes all possible planning as defined in 23 CFR 774.17, to minimize harm to the property resulting from such use; or

(b) The administration determines that the use of the property, including any measure(s) to minimize harm (such as any avoidance, minimization, mitigation, or enhancement measures) committed to by the applicant, will have a *de minimis* impact, as defined in 23 CFR 774.17, on the property."

The Federal Highway Administration (FHWA) policy paper states in section 3.3.1 that a *de minimis* impact determination can be made if there is a Section 106 finding of no adverse effect or no effect on the historic property.

The following alternatives have right of way impacts to a Section 4(f) resource, the Wilmington Historic District, and have been determined to have an adverse impact to the district:

- Alternative F
- Alternative P
- Alternative VA
- Alternative VF

FHWA has determined that Alternatives F, P, VA, and VF of the Cape Fear study project cannot be approved by the USDOT. FHWA has determined that there is a “use”, as defined in 23 CFR 774.17, of the Wilmington Historic District for these alternatives, and FHWA has determined that there are prudent and feasible alternatives present that avoid the use of the Wilmington Historic District that have been selected for detailed study as defined in 23 CFR 774.17.

FHWA understands that North Carolina Department of Transportation (NCDOT) and the Corps of Engineers is interested in continuing to study at least one of these four alternatives (Alternative VA) in detail. FHWA is willing to concur on continuing to study Alternative VA, with the understanding that NCDOT will seek to reduce impacts of this alternative on the Wilmington Historic District. If after further design work, the alternative still has an adverse effect and requires the use of land from the Wilmington Historic District, FHWA will not be able to select that alternative for the project.

Sincerely,

A handwritten signature in blue ink, appearing to read "John F. Sullivan, III", with a long horizontal flourish extending to the right.

For John F. Sullivan, III, P.E.
Division Administrator

Rocco, Joanna

From: Shaver, Brad E CIV USARMY CESAW (US) <Brad.E.Shaver@usace.army.mil>
Sent: Monday, June 04, 2018 3:49 PM
To: Rocco, Joanna; Herndon, T. Mason
Cc: 'teroberts1@ncdot.gov'; Conforti, John G (jgconforti@ncdot.gov); Foushee, Celia; Matthews, Monte K CIV USARMY CESAW (US)
Subject: RE: U-4738 Cape Fear Crossing: Alternative VA

Joanna,

I spoke briefly with the Division 3 Env. Supervisor a few minutes ago and after a discussion he had with the Deputy Division Engineer, the Division is not opposed to allowing VA to progress as a reasonable alternative under NEPA. The decision to drop further would come under the LEDPA alternative decision point under the Merger process. The Corps sees no reason to change previous decisions at this point in the process.

Brad

-----Original Message-----

From: Rocco, Joanna [<mailto:joanna.rocco@aecom.com>]
Sent: Monday, June 4, 2018 11:53 AM
To: Shaver, Brad E CIV USARMY CESAW (US) <Brad.E.Shaver@usace.army.mil>
Cc: 'teroberts1@ncdot.gov' <teroberts1@ncdot.gov>; Conforti, John G (jgconforti@ncdot.gov) <jgconforti@ncdot.gov>; Foushee, Celia <celia.foushee@aecom.com>
Subject: [Non-DoD Source] U-4738 Cape Fear Crossing: Alternative VA

Hi Brad,

Hope you're doing well!

We just held a conference call with NCDOT Division 3 and the WMPO regarding Alternative VA. As you know, at the Concurrence Point 2A meeting last fall we received concurrence from the merger team to eliminate 6 of the 12 detailed study alternatives for the Cape Fear Crossing project. As part of that discussion, we had also recommended potentially eliminating Alternative VA due to the Section 106 adverse effect call on the Wilmington Historic District. It was not decided to drop the alternative at that meeting due to the request to have more coordination with FHWA after the meeting regarding its Section 4(f) use on the historic district.

In a letter from Ron Lucas with FHWA, it was noted Alternative VA could not be approved by the USDOT due to the use of the district, but that FHWA would be willing to agree to continuing to study it with the understand that NCDOT would seek to reduce impacts of this alternative on the historic district. The project team has further studied this alternative and has determined it still requires land from the district.

NCDOT and the WMPO have agreed that Alternative VA could be eliminated from further study due to these reasons, therefore we'd like to set up a time to discuss with you so we can move forward in completing the Draft Environmental Impact Statement.

Let me know if you have any availability in the next week or two to discuss and we'll get a call with NCDOT on the calendar. If you need any additional information in the meantime, please let me know.

Thank you!

Joanna

With

Joanna H. Rocco, AICP
Senior Environmental Planner, Transportation
Office: 919-239-7179

Mobile: 919-607-7975
joanna.rocco@aecom.com <<mailto:joanna.rocco@aecom.com>>

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Appendix A2: Correspondence from State Agencies

Correspondence from State Agencies

Date	From	To	General Subject
12/20/2005	NC Ecosystem Enhancement Program	URS Corporation	Cape Fear Skyway Preliminary Study Boundary
02/16/2006	HPO	NC Turnpike Authority	Memorandum from the HPO to NCTA recommending that any structure over 50 years of age within the project study area be evaluated.
02/21/2006	HPO	NC Turnpike Authority	Memorandum from the HPO to NCTA recommending that an archaeological survey be conducted across the study area to identify and evaluate potentially significant sites, including underwater portions of the Cape Fear River, Big Mallory Creek, and Town Creek and its tributaries.
07/17/2006	URS Corporation	NC Coastal Land Trust	Cape Fear Skyway and land holdings
04/25/2007	URS Corporation	NCSPA	Ship requirements for the Cape Fear Skyway
06/14/2007	NC State Ports Authority	URS Corporation	Ship air draft requirements for the Cape Fear Skyway
11/06/2007	NC Turnpike Authority	FHWA North Carolina Division	STIP U-4738 Cape Fear Skyway: Notification of Project Initiation
11/06/2007	NC Turnpike Authority	NCDOT	Preliminary Mapping Request and Level D SUE Assistance for Cape Fear Skyway
07/02/2008	NCSPA	URS Corporation	NC State Ports info
07/02/2008	URS Corporation	NCSPA	Port data – vessels and commodities
08/12/2008	URS Corporation	NCSPA	Military vessel activity at Port of Wilmington
12/11/2008	NCSPA	URS Corporation	NCSPA truck projections and counts
01/07/2009	NCSPA	URS Corporation	Strategic seaports
03/03/2009	URS Corporation	NC Coastal Land Trust	NCCLT properties and Cape Fear Skyway
03/16/2009	NC Coastal Land Trust	URS Corporation	NCCLT properties shapefiles
04/28/2009	NCSPA	URS Corporation	Economic impacts – port importance
05/08/2009	NCSPA	URS Corporation	Economic impacts –rail and truck gate moves
05/11/2009	URS Corporation	NC State Ports Authority	Rail vs. truck traffic at Port of Wilmington
08/10/2009	NC State Ports Authority	Wilmington MPO	Military movements through port

Correspondence from State Agencies

Date	From	To	General Subject
09/11/2009	NC State Ports Authority	Wilmington MPO	Support for the Cape Fear Skyway Bridge
09/23/2009	NC Department of Cultural Resources	Office of Human Environment NCDOT Division of Highways	Draft #3: Terrestrial Cultural Resources Background Report
03/02/2010	NC Department of Environment and Natural Resources Division of Water Quality	NCTA	Comments on Draft Section 6002 Coordination Plan
03/09/2010	NC State Ports Authority	URS Corporation	Contact info for other terminals north of the NCPSA
03/09/2010	URS Corporation	NCSPA	Navigation/Bridging issues with replacing Cape Fear Memorial Bridge
03/11/2010	NC Department of Environment and Natural Resources Division of Water Quality	NC Turnpike Authority	Cape Fear Skyway project - participating agency invitation
04/11/2013	NCDWQ	NCDOT	Agreement to place project in NEPA/Section 404 Merger Process.
05/22/2013	NC Coastal Land Trust	URS Corporation	Data request
05/06/2015	HPO	NCDOT	Concurrence letter from HPO to NCDOT regarding NRHP eligibility of historic resources
06/13/2016	HPO	NCDOT	Concurrence letter from HPO to NCDOT regarding NRHP eligibility of historic resources
05/22/2017	NC State Ports Authority	NCDOT	NC Ports Strat Plan and Economic Impact documents
05/22/2017	NC State Ports Authority	AECOM	NC Ports stance on navigational clearance
05/24/2017	HPO	NCDOT	Final Section 106 effects concurrence form
05/26/2017	NC State Ports Authority	WMPO	Air Draft memorandum detailing Port of Wilmington navigational clearance needs



Colleen Kiley
<colleen.kiley@ncmail.net>
12/20/2005 11:34 AM

To Tina_Randazzo@URSCorp.com
cc Ed Hajnos <edward.hajnos@ncmail.net>
bcc
Subject Re: Cape Fear Skyway Preliminary Study Boundary

Tina-

It looks like we do not have any sites within your area. One is very close though. I'm sending our sites within the general vicinity in case your study area shifts slightly. Please do not show these sites publicly. I have not verified some of them, and I don't want someone to see a mitigation site on their property that should be located on a nearby property. There are two type of sites shown here. Anything with a Tier of 1 in the table is an existing site. Tier 2 sites are ones that we are pursuing. It appears that most of these sites were DOT transfers, so I don't have easement boundaries for any of them. I hope this helps you!

The file I'm sending is a zip file, but our filters frequently strip .zip files from incoming and outgoing e-mails. You will need to save the file and change the .piz extention back to .zip to unzip the files.

-Colleen

Tina_Randazzo@URSCorp.com wrote:

Hi Colleen,

Attached, please find a very preliminary study boundary for the Cape Fear Skyway Project.

Thanks so much for identifying any mitigation sites that may fall within the boundary.

If you have any questions, please don't hesitate to contact me.

Thanks again!

(See attached file: Preliminary Study Boundary.pdf)

Tina Randazzo
Environmental Scientist
URS Corporation
1600 Perimeter Park Drive
Morrisville, NC 27560
Office Number: 919-461-1100
Direct Number: 919-461-1459
Tina_Randazzo@URSCorp.com

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--

Colleen Kiley

GIS Coordinator

NC Ecosystem Enhancement Program

919-715-0975

www.nceep.net



EEP_NHAsites.piz

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FEB 21 2006



North Carolina Department of Cultural Resources
State Historic Preservation Office

Peter B. Sandbeck, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary

Office of Archives and History
Division of Historical Resources
David Brook, Director

February 16, 2006

MEMORANDUM

TO: Gail Grimes
NC Turnpike Authority

FROM: Peter Sandbeck *PB Sandbeck*

SUBJECT: Scoping, Cape Fear Skyway Candidate Toll Road Project, U-4738, Brunswick and New Hanover Counties, CH05-2935

Thank you for your January 13, 2006, notification materials concerning the above project.

We have conducted a search of our maps and files and located the following structures of historical or architectural importance within the general area of this project:

- (NH 3) Wilmington Historic District and Expansions, (NR)
- (NH 1634) Wilmington National Cemetery, (NR)
- (NH 24) Bellamy Mansion, 503 Market St., Wilmington, (SL)
- (NH 1) City Hall – Thalian Hall, NE corner Third and Princess Sts., Wilmington, (NR)
- (NH 2) Federal Building and Courthouse, Wilmington, (NR)
- (NH 4) U. S. S. North Carolina, Wilmington, (NR)
- (NH 2345) Gabriel's Landing, 1005 Ainlie Road, Wilmington, (NR)
- (NH 1636) former William Hooper School, 410 Meares St., Wilmington, (NR)
- (NH 160) Oakdale Cemetery, 520 N. 15th St., Wilmington, (NR)
- (NH 1181) James Walker Nursing School Quarters, (NR)

We recommend that a department of Transportation architectural historian identify and evaluate any structures over fifty years of age within the project area and report the findings to us.

We recommend that a comprehensive survey be conducted by an experienced archaeologist to identify and evaluate the significance of archaeological remains that may be damaged or destroyed by the proposed project. Potential effects on unknown resources must be assessed prior to the initiation of construction activities.

ADMINISTRATION
RESTORATION
SURVEY & PLANNING

Location
507 N. Blount Street, Raleigh NC
515 N. Blount Street, Raleigh NC
515 N. Blount Street, Raleigh, NC

Mailing Address
4617 Mail Service Center, Raleigh NC 27699-4617
4617 Mail Service Center, Raleigh NC 27699-4617
4617 Mail Service Center, Raleigh NC 27699-4617

Telephone/Fax
(919)733-4763/733-8653
(919)733-6547/715-4801
(919)733-6545/715-4801

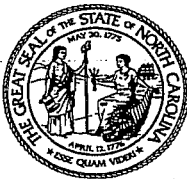
Two copies of the resulting archaeological survey report, as well as one copy of the appropriate site forms, should be forwarded to us for review and comment as soon as they are available and well in advance of any construction activities.

A list of archaeological consultants who have conducted or expressed an interest in contract work in North Carolina is available at www.arch.dcr.state.nc.us/consults.htm. The archaeologists listed, or any other experienced archaeologist, may be contacted to conduct the recommended survey.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763. In all future communication concerning this project, please cite the above-referenced tracking number.

cc: Mary Pope Furr, NCDOT
Matt Wilkerson, NCDOT



RECEIVED

MAR 9 - 2006

North Carolina Department of Cultural Resources
State Historic Preservation Office

Peter B. Sandbeck, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary

Office of Archives and History
Division of Historical Resources
David Brook, Director

February 21, 2006

MEMORANDUM

TO: Gail Grimes, PE
North Carolina Turnpike Authority

FROM: Peter Sandbeck *PBS for Peter Sandbeck*

SUBJECT: Scoping Cape Fear Skyway, Candidate Toll Road, U-4738, Brunswick and New Hanover Counties, CH 05-2935

We appreciate your invitation to participate in the planning phase of the Cape Fear Skyway, Transportation Improvement Project number U-4738. In terms of archaeological resources within the study corridor, twenty-one sites have been identified, including two historic watercraft. Although most of the sites have been assessed and considered ineligible for inclusion on the National Register of Historic Places, much of the study corridor has never undergone archaeological scrutiny. Based on the topographic and hydrological conditions, there is a very high probability that previously undiscovered prehistoric and historic archaeological sites exist within the overall study corridor. We therefore recommend that an archaeological survey be conducted across the study corridor to identify and evaluate potentially significant sites. This survey should include pertinent underwater portions of the Cape Fear River, Big Mallory Creek, Town Creek and its tributaries. If significant sites are identified, appropriate measures should be taken to minimize adverse impacts. We look forward to working with your agency to identify cultural resources that are in jeopardy and to formulate a plan to minimize or mitigate for these impacts.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment please contact Renee Gledhill-Earley, environmental review coordinator, at 919 733 4763. In all future communication concerning this project, please cite the above referenced tracking number.

ADMINISTRATION
RESTORATION
SURVEY & PLANNING

Location
507 N. Blount Street, Raleigh NC
515 N. Blount Street, Raleigh NC
515 N. Blount Street, Raleigh, NC

Mailing Address
4617 Mail Service Center, Raleigh NC 27699-4617
4617 Mail Service Center, Raleigh NC 27699-4617
4617 Mail Service Center, Raleigh NC 27699-4617

Telephone/Fax
(919) 733-4763/733-8653
(919) 733-6547/715-4801
(919) 733-6545/715-4801



1600 Perimeter Park Drive
Morrisville, NC 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1415

RECORD OF TELEPHONE CONVERSATION

DATE: 07/17/06		PROJECT NO. 31825110	
RECORDED BY: DAVID GRIFFIN		OWNER/CLIENT: NCTA	
TALKED WITH: JANICE ALLEN		FROM: NC COASTAL LAND TRUST	
NATURE OF CALL (INCOMING OR OUTGOING) OUTGOING			
ROUTE TO:	FOR INFORMATION		FOR ACTION
	File		Brenda Crumpler – Mailing List Shannon Cox – Database Tracy Roberts
MAIN SUBJECT OF CONVERSATION: CAPE FEAR SKYWAY			

I contacted Ms. Allen to obtain additional information regarding NCCLT land holdings. I advised her that I was working on the Skyway EIS and had been given a map of NCCLT land holdings but that it was difficult to read and interpret. I asked if she had a map or digital file she could give me. She replied in the affirmative but asked that I make the request in writing.

She also asked if we would be investigating secondary impacts as well. I advised that we would as part of the DEIS.

I will advise the GEC and draft a request letter to send to Ms. Allen. Ms. Allen should also be added to the project mailing list.

Contact information:

Janice Allen
Director of Land Protection
N.C. Coastal Land Trust
P.O. Box 15451
New Bern, NC 28561
252-634-1927 – Office
janice@coastallandtrust.org

Brenda K. Crumpler



David
Griffin/Morrisville/URSCorp
04/25/2007 03:13 PM

To Bill_Bennett@ncports.com
cc Kiersten Giugno/Morrisville/URSCorp@URSCorp, Brenda
Crumpler, tracy.roberts@ncturnpike.org,
jennifer.harris@ncturnpike.org
bcc
Subject Fw: Ship requirements for the Cape Fear Skyway

Good afternoon, Bill.

Brenda forwarded this to me and I wanted to do my best to respond to your questions.

Regarding the first question about air draft - that issue has not yet been addressed to its fullest extent and the parameter has not been defined. That is to be determined in our next phase of the study.

Regarding the second question, cost estimates are being developed by the Turnpike Authority and are reviewed and modified, if necessary, on a monthly basis. There is a rather wide range between the low and high ends, primarily because of the unknowns about vertical clearance of the bridge. If the estimate range doesn't have a high of \$1B, it's close. The low end, I believe is in the \$600M range. HNTB, the Turnpike Authority's GEC, can provide you with more detailed cost information. I have copied Tracy Roberts and Jennifer Harris on this e-mail.

In general, the project studies have been delayed pending the results of the traffic-revenue forecasts, which I believe will be forthcoming in June or July. If there are indications that the project appears feasible, (and I believe it will be, especially with the uncertainties associated with the bridge height) then studies will resume. Determining the appropriate bridge height will be on the critical path. I think the Ports will be instrumental in helping with this analysis and appropriate determination.

Thank you for your interest. I will keep you posted.

David

David A. Griffin, CEP
Vice President

Manager, Environmental Planning & Analysis Group
URS Corporation
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
Office phone: 919/461-1100
Direct: 919/461-1446
Cell: 919/345-9924
Fax: 919/461-1415
e-mail: david_griffin@urscorp.com

This e-mail and any attachments are confidential. If you receive this message in error or are not the intended recipient, you should not retain, distribute, disclose or use any of this information and you should destroy the e-mail and any attachments or copies.

----- Forwarded by David Griffin/Morrisville/URSCorp on 04/25/2007 03:02 PM -----



Brenda
Crumpler/Morrisville/URSCorp

To David_Griffin@urscorp.com
cc



04/25/2007 02:30 PM

Subject Fw: Ship requirements for the Cape Fear Skyway

Brenda K. Crumpler
Marketing Coordinator - Infrastructure Group
URS Corporation
1600 Perimeter Park Drive
Suite 400
Morrisville, NC 27560
Telephone: 919-461-1236 (Direct)
Telephone: 919-461-1100
Fax: 919-461-1235 (Direct)
E-mail: brenda_crumpler@urscorp.com

This e-mail and any attachments are confidential. If you receive this message in error or are not the intended recipient, you should not retain, distribute, disclose or use any of this information and you should destroy the e-mail and any attachments or copies.

----- Forwarded by Brenda Crumpler/Morrisville/URSCorp on 04/25/2007 02:30 PM -----



Bill_Bennett@ncports.com

04/25/2007 02:14 PM

To Brenda_Crumpler@URSCorp.com

cc

Subject Fw: Ship requirements for the Cape Fear Skyway

Ms. Crumpler: I have not had any reply to the e-mail below. Is it possible for you to forward it to the appropriate person(s) working on the Cape Fear Skyway project? Thanks,

Bill Bennett, P.E., M.P.A.
Vice President, Planning and Development
North Carolina State Ports Authority
(W) 910-251-7071
(M) 910-297-3118

----- Forwarded by Bill Bennett/NCPORTS on 04/25/2007 02:14 PM -----

Bill Bennett/NCPORTS

04/23/2007 03:39 PM

To kiersten-giugno@urscorp.com

cc

Hello Ms. Guigno.

I met you in June last year when you came to the Ports Authority with David Griffin and a couple of other people to discuss the CF Skyway project.

At that time, you were looking for data on the maximum ship height above the water line (we call it air draft) of the ships calling on the port for bridge height consideration. If I remember correctly, we did not provide any height requirements for container vessels, but rather advised that you get that directly from the shipping lines.

Two things are happening.

1. First, our new (much larger) cranes have arrived and are in operation, already resulting in larger ships that are using the Port of Wilmington. What design air draft did you decide to use?
2. Second, we heard a rumor recently that, of course, we could not track down, that the cost estimates of the CF Skyway are being driven up to \$1 B in large part because of the height requirement imposed to allow container ships to go under it. I have been hearing for some time now that the CFS cost estimates keep going up, but I have not heard a figure that high, nor have it seen it in the media as being attributed to container ships. Is it at all true?


I would appreciate it if you could let me know about this. Thanks a lot.

Bill Bennett, P.E., M.P.A.
Vice President, Planning and Development
North Carolina State Ports Authority
(W) 910-251-7071
(M) 910-297-3118



Bill_Bennett@ncports.com
06/14/2007 03:56 PM

To David_Griffin@URSCorp.com
cc Stephanie_Ayers@ncports.com,
Layton_Bedsole@ncports.com
bcc
Subject SHIP AIR DRAFT REQUIREMENTS FOR THE CAPE FEAR
SKYWAY

History:  This message has been forwarded.

Good afternoon, David.

In response to your inquiry about reasonable FREIGHT SHIP requirements for bridge clearance under the proposed Cape Fear Skyway, we think the bridge should have the maximum height possible. For all practical purposes at this point in time, we believe that the bridge should not have a lower clearance than the existing Progress Energy transmission lines. Once you build the bridge, its clearance will set the air draft limits forever, even if the lines are moved or replaced at some time in the future. Having a bridge clearance that is the same height as the lines provides the most flexibility for the near term as well as for future needs; anything else would be unacceptable.

I was able to determine that even allowing for margins of safety for clearance, we would probably never have a FREIGHT SHIP at the current Port of Wilmington that needed more than 160' to 165' of air draft. FYI: the ship dimension that corresponds to height above the water line is called air draft. Required clearance for a ship's air draft dimension is usually needed at the highest of high tides, but clearances for ship navigation purposes are frequently measured at Mean Lower Low Water (MLLW).

But the possibilities are many and we need to plan for the future. It is impossible for either of us to predict what will happen 20 or even 50 years from now. Future vessel designs may call for wider versus deeper draft vessels given the draft constraints at a majority of U.S. and foreign ports. This could also impact bridge design and should be considered by designers. Eagle Island could come into play, either as container, general cargo, cruise, or automobile terminal. It became apparent to us that since Progress Energy's power line height already is the controlling limit on air draft, we should not increase the impact. The existing power lines have a clearance of approximately 186' at MLLW. (We can provide you with a survey we did in the past, but you will eventually want to verify that for yourselves.)

PASSENGER SHIPS

We discussed passenger ships at a previous meeting. Our community has an abiding interest in encouraging cruise line operations in Wilmington. Major cruise lines have cited power line clearance as the major obstacle to bringing 2,000+-passenger cruise ships into Wilmington. As I recall, cruise line industry officials told us several years ago that vessels in service at that time required approximately 210' feet of air draft, much higher than the clearance at the Progress Energy transmission lines. I believe we need to resolve this issue before

determining the optimum bridge clearance.

The NC State Ports Authority does not want our requirements to be cited as the reason why the air draft of the Skyway prevented cruise ships from ever making Wilmington a Port-of-Call. This is not a State Ports Authority, or a Wilmington area, or even a NCTA decision. In my opinion, the issue needs to be considered objectively by an independent third party with input from the public, tourism officials, and the commercial and economic development communities in this entire region, if not the entire state. As an indication of how seriously the Ports Authority considers the “need” perceived by the local community, we intend to have a market analysis and feasibility study performed to research the potential for having a cruise ship homeport and or port-of-call associated with the new North Carolina International Port in Brunswick County. Unfortunately, we will not undertake this study for a few years.

I hope this helps.

Bill Bennett, P.E., M.P.A.
Vice President, Planning and Development
North Carolina State Ports Authority
(W) 910-251-7071
(M) 910-297-3118



STATE OF NORTH CAROLINA
TURNPIKE AUTHORITY

MICHAEL F. EASLEY
GOVERNOR

1578 MAIL SERVICE CENTER, RALEIGH, N.C. 27699-1578

DAVID W. JOYNER
EXECUTIVE DIRECTOR

November 6, 2007

Deborah M. Barbour, PE
Director of Preconstruction
North Carolina Department of Transportation
1541 Mail Service Center
Raleigh, NC 27699-1541

**RE: Preliminary Mapping Request and Level D SUE Assistance for Cape Fear Skyway
Brunswick and New Hanover Counties
STIP Project No. U-4738**

Dear Ms. Barbour:

The North Carolina Turnpike Authority (NCTA) is currently studying the Cape Fear Skyway as a potential toll facility. The NCTA is requesting preliminary mapping (including field classifications) in English units at a scale of 1" = 200'. The coverage will be the same as the aerial photography limits flown by NCDOT in February 2006 (see attached figure). Per a meeting on November 2, 2007 with DeWayne Sykes, Jurek Gedzior, Watson McNeill and Dale Burton of your staff—and a subsequent email from Rob Allen (attached)--we understand that NCDOT will deliver the preliminary mapping to NCTA by April 1, 2008.

NCTA also proposes that the NEPA consultant—URS Corporation—contract with MA Engineering to provide Level D SUE data for the same limits as the preliminary mapping. NCDOT agrees to review the scope of services and prepare an in-house estimate and negotiate the fee (if necessary) with the consultant as well as review the SUE data for quality control. The SUE data will be in CADD format that will be referenced into the preliminary mapping files. The final SUE CADD file will be available to NCTA by May 1, 2008.

The WBS charge number is 40114.1TA1. *Please provide NCTA's accountant, Mr. Dane Berglund (Telephone: 919-510-4381, E-mail dane.berglund@ncturnpike.org), with the estimated labor charges for this effort. If you have any questions, please contact Mr. Berglund directly.*

Please do not hesitate to contact me at (919) 571-3030 (steve.dewitt@ncturnpike.org) or Jennifer Harris at (919) 571-3004 (jennifer.harris@ncturnpike.org) if you have any questions or would like to discuss this request further.

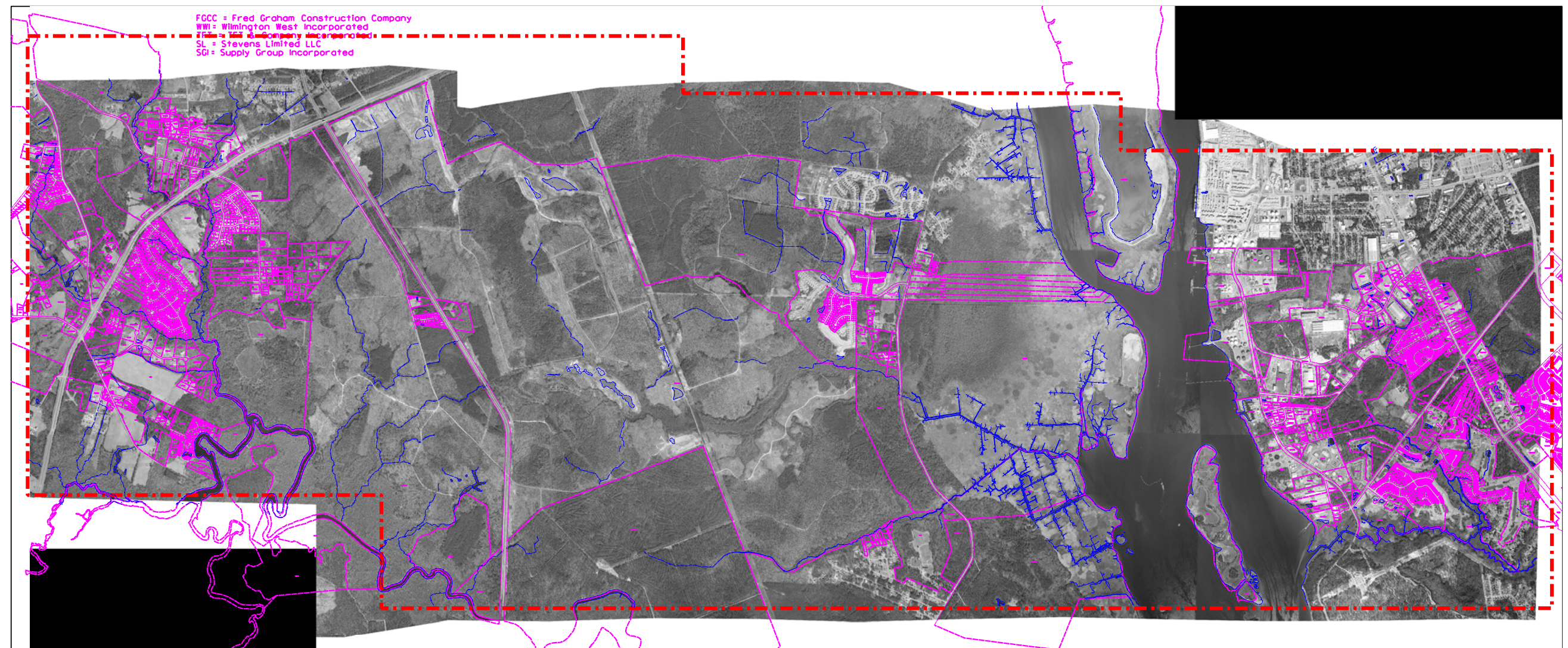
Sincerely,

A handwritten signature in black ink, appearing to read "Steve D. DeWitt", followed by a horizontal line.

Steven D. DeWitt, P.E.
Chief Engineer

Attachments: Figure showing coverage request for preliminary mapping and Level D SUE data
Email correspondence from NCDOT dated November 2, 2007

cc: Sandy Nance, NCDOT-Asst. to State Highway Administrator
A.D. (Doug) Allison, II, NCDOT-Right of Way Branch Manager
Keith Johnston, P.E., PLS, NCDOT-State Photogrammetric Engineer
Rob Allen, P.E., PLS, NCDOT-Asst. State Photogrammetric Engineer
Dewayne Sykes, P.E., NCDOT-Asst. State Roadway Design Engineer
Charles Brown, P.E., PLS-NCDOT-State L&S Engineer
Dale Burton, P.E. PLS, NCDOT-Asst. State L&S Engineer
Watson McNeill, P.E., PLS, NCDOT-Contract Administrator
Jurek Gedzior, PLS-NCDOT-Automation Manager
Jennifer Harris, P.E., NCTA-Staff Engineer
Dane Berglund, NCTA-Senior Accountant
Tracy Roberts, HNTB-NCTA/GEC
David Griffin, URS



...\u4738_ph_prop_060629.dgn 11/6/2007 1:34:52 PM

Jennifer Harris

From: Rob Allen, PE, PLS [roballen@dot.state.nc.us]
Sent: Friday, November 02, 2007 3:16 PM
To: Jennifer Harris; 'Dewayne L. Sykes PE'
Cc: Deborah M. Barbour PE; Jurek Gedzior, PLS; Keith Johnston, PE, PLS
Subject: NCTA Cape Fear Skyway (U-4738)

Attachments: roballen.vcf



roballen.vcf (526 B)

Jennifer,

I have reviewed the mapping limits for U-4738 with Jurek and we will be able to meet your 4-1-2008 delivery date.

I interpret the July 28, 2006 Guideline for coordination between NCDOT and NCTA to indicate that the NCTA should make a formal request to the NCDOT Director of Preconstruction for the mapping services that were scoped today. I would CC Dewayne Sykes and Keith Johnston on that request.

Let me know if you have any questions or concerns.

Rob



STATE OF NORTH CAROLINA
TURNPIKE AUTHORITY

MICHAEL F. EASLEY
GOVERNOR

1578 MAIL SERVICE CENTER, RALEIGH, N.C. 27699-1578

DAVID W. JOYNER
EXECUTIVE DIRECTOR

November 6, 2007

John F. Sullivan, III, P.E.
Division Administrator
FHWA North Carolina Division
310 New Bern Avenue, Suite 410
Raleigh, NC 27601-1418

**RE: STIP U-4738 Cape Fear Skyway
Notification of Project Initiation**

Dear Mr. Sullivan,

In accordance with Section 6002 of SAFETEA-LU, the North Carolina Turnpike Authority (NCTA) is notifying the Federal Highway Administration (FHWA) that planning, environmental, and engineering studies for the proposed Cape Fear Skyway are underway. The project is included in the 2007-2013 North Carolina State Transportation Improvement Program (STIP) as Project U-4738. The Cape Fear Skyway project was adopted by NCTA as a toll-candidate project in February 2005.

NCTA, in cooperation with North Carolina Department of Transportation (NCDOT), is preparing an Environmental Impact Statement (EIS) on the proposal to construct a 9.5 mile multi-lane highway on new location from US 17 in Brunswick County to US 421 in New Hanover County. The project would include a crossing of the Cape Fear River.

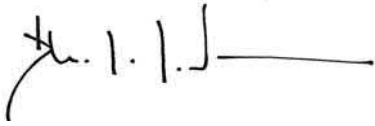
It is anticipated that a Clean Water Act 404 Individual Permit will be required from the US Army Corps of Engineers (USACE) as well as a US Coast Guard (USCG) Bridge Permit. NCTA will coordinate throughout project development with the USACE and USCG to assure that their concerns are addressed and incorporated into the EIS.

For your reference I am enclosing a copy of the Notice of Intent (NOI) to prepare an EIS. The NOI was published in the *Federal Register* on May 11, 2006.

The Project Coordination Plan required by Section 6002 of SAFETEA-LU is under development and will be coordinated with FHWA and discussed with the agencies at a future Turnpike Environmental Agency Coordination (TEAC) meeting. Following an initial review of the Coordination Plan with TEAC participants, participating and cooperating agency invitation letters will be distributed.

If you have any questions or would like to discuss the project in more detail, please contact Jennifer Harris at (919) 571-3004.

Sincerely,

A handwritten signature in black ink, appearing to read "S.D. DeWitt", followed by a horizontal line.

Steven D. DeWitt, P.E.
Chief Engineer

Attachment: Notice of Intent

cc: George Hoops, P.E., FHWA-NC Division
Jennifer Harris, P.E., NCTA
Deborah Barbour, P.E., NCDOT
Anne Redmond, E.I., HNTB NCTA/GEC
Tracy Roberts, HNTB NCTA/GEC

directions, maps, and nearby hotels may be found by accessing the RTCA Web site.

SUPPLEMENTARY INFORMATION: Pursuant to section 10(a)(2) of the Federal Advisory Committee Act (Pub. L. 92-463, 5 U.S.C., Appendix 2), notice is hereby given for a Special Committee 189/EUROCAE Working Group 53 meeting.

Meeting Objectives

- Resolve all comments and issues to complete the Safety and Performance Requirements Standard for Air Traffic Data Link Services in Oceanic and Remote Airspace by July 26, 2006 for final review and consultation.

- Resolve all comments and issues to complete the FANS 1/A-ATN Interoperability Standard by July 26, 2006 for final review and consultation.

- Agree on a work statement for SC-189/WG-53 that details work items and milestones.

The plenary agenda will include:

- June 20:
 - Opening Plenary Session (Welcome, Introductions, and Administrative Remarks, Review and approval of Agenda and Meeting Minutes) Administrative.
 - SC-189/WG-53 co-chair progress report and review of work program.
 - Determine and agree to breakout groups if necessary.
- June 21-22:
 - Breakout groups, as agreed, and plenary debriefs, as necessary.
- June 23:
 - Debrief on progress for the week.
 - Closing Plenary Session (Review schedule and new action items. Any other business, Adjourn).

Attendance is open to the interested public but limited to space availability. With the approval of the chairmen, members of the public may present oral statements at the meeting. Persons wishing to present statements or obtain information should contact the person listed in the **FOR FURTHER INFORMATION CONTACT** section.

Members of the public may present a written statement to the committee at any time.

Issued in Washington, DC, on May 3, 2006.

Francisco Estrada C.,

RTCA Advisory Committee.

[FR Doc. 06-4363 Filed 5-10-06; 8:45 am]

BILLING CODE 4910-13-M

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

Environmental Impact Statement: Brunswick and New Hanover Counties, NC

AGENCY: Federal Highway Administration (FHWA).

ACTION: Notice of intent.

SUMMARY: The FHWA is issuing this notice to advise the public that an environmental impact statement will be prepared for a proposed highway project in Brunswick and New Hanover Counties, North Carolina.

FOR FURTHER INFORMATION CONTACT:

Clarence W. Coleman, PE., Operations Engineer, Federal Highway Administration, 310 New Bern Avenue, Suite 410, Raleigh, North Carolina 27601-1418, Telephone: (919) 856-4346.

SUPPLEMENTARY INFORMATION: The FHWA, in cooperation with the North Carolina Department of Transportation (NCDOT) and the North Carolina Turnpike Authority (NCTA), will prepare an environmental impact statement (EIS) on a proposal to construct a multi-lane highway facility in Brunswick and New Hanover Counties, North Carolina. Known as the Cape Fear Skyway, the proposed improvement would extend from US 17 in Brunswick County, near the community of Bishop, to US 421 in the city of Wilmington for a distance of approximately 9.5 miles. The project would include a crossing of the Cape Fear River.

The proposed highway facility is considered necessary as a means to improve regional traffic flow, enhance access to the North Carolina Ports, improve emergency service response times and facilitate emergency evacuation. Preliminary alternatives to be evaluated include (1) taking no action (2) Transportation System Management (TSM); (3) Transportation Demand Management (TDM); (4) Mass Transit; and (5) constructing a multi-lane facility on new location with full control of access. Incorporated into and studied with the various build alternatives will be design variations of grade and alignment. The EIS will address environmental, social, and economic impacts associated with the development of the proposed action.

Letters describing the proposed action and soliciting comments will be sent to appropriate Federal, State, and local agencies, and to private organizations and citizens who have previously expressed or are known to have an

interest in this proposal. A series of public meetings will be held in the vicinity of the project throughout the development of the EIS. In addition, a public hearing will be held. Public notice will be given of the time and place of the meetings and hearing. The draft EIS will be available for public and agency review and comment prior to any public hearings being held.

To ensure that the full range of issues related to this proposed action are addressed and all significant issues identified, comments and suggestions are invited from all interested parties. Comments or questions concerning this proposed action and the EIS should be directed to the FHWA at the address provided above.

(Catalog of Federal Domestic Assistance Program Number 20.205, Highway Planning and Construction. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities apply to this program)

Issued on: May 4, 2006.

Clarence W. Coleman,

Operations Engineer, Raleigh, North Carolina.

[FR Doc. 06-4367 Filed 5-10-06; 8:45 am]

BILLING CODE 4910-22-M

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

Environmental Impact Statement: Sampson, Duplin, and Cumberland Counties, NC

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Revised notice of intent.

SUMMARY: The FHWA is issuing this notice to advise the public that we are rescinding the Draft Environmental Impact Statement for a proposed highway project in Sampson, Duplin, and Cumberland Counties, North Carolina

FOR FURTHER INFORMATION CONTACT:

Clarence W. Coleman, P.E., Operations Engineer, Federal Highway Administration, 310 New Bern Avenue, Ste 410, Raleigh, North Carolina 27601-1418, Telephone: (919) 856-4346.

SUPPLEMENTARY INFORMATION: The FHWA, in cooperation with the North Carolina Department of Transportation (NCDOT), is rescinding the Draft Impact Environmental Statement (DEIS) for the proposed NC 24 improvements from 2.8 miles east of I-95 to I-40. In June, 1994, the DEIS for the project was approved, published, and made available for public review. The DEIS evaluated in detail twelve (12) Build alternatives.



Stephanie_Ayers@ncports.com

07/02/2008 02:30 PM

To susan.shelingoski@urscorp.com

cc Bill_Bennett@ncports.com

bcc

Subject NC State Ports

Susan,

Per our phone conversation, please find the port information requested to complete your Cape Fear Skyway Bridge study for URS.

1. Major commodities at NC State Ports
2. Shipping log for NC State Ports (7/1/2006 - 6/30/2007)
3. Business Forecast for NC State Ports
4. Description of Operations (below)

Also, feel free to search our website (ncports.com) for more info.

Description of Operations

- What is the nature of your business?

The North Carolina State Ports Authority is the governing body that administers the North Carolina's Port of Wilmington, Port of Morehead City and inland terminals in Greensboro and Charlotte. The nature of the business is to support economic development in North Carolina through the operation of shipping terminals and the movement of cargo.

- Describe the products and/or services your company provides?

The Port of Wilmington offers terminal facilities serving military, container, bulk and breakbulk operations. The Port of Morehead City offers terminal facilities serving military, bulk and breakbulk operations. The inland terminal in Charlotte serves the I-85 and I-77 distribution corridors as a neutral container yard operator for container carriers, and serves as a staging area for empty and loaded containers. The inland terminal in Greensboro serves the I-40 and I-85 corridors.

- What is the number of employees employed locally?

As of April 28, 2008, the number of State employees at the combined facilities totaled 283. This does not include other direct jobs at the facilities (like stevedores, terminal operators, trucking firms, steamship agents, freight forwarders and others on the terminal and involved in maritime activities at the facilities). In a study completed by Martin Associates in 2006 the estimated number of direct jobs generated by the Ports Authority (at all facilities) totaled 4,899. In the same calendar year (2006), 84,833 jobs in the state of North Carolina were in some way related to the maritime activity at the Port of Wilmington and the Port of Morehead City.

- Why are you located or have a branch here? Are there any competitive advantages locally over other areas? If so, what are they?

The location of the North Carolina State Ports Authority is based on deepwater access. In 1949, the General Assembly approved the issue of \$7.5 million in bonds for construction and improvement of seaports to promote trade throughout the state. Public terminals equipped to handle oceangoing vessels were completed at Wilmington and Morehead City in 1952.

Thanks,

Stephanie Ayers
Director of Planning & Development
North Carolina State Ports Authority



910-251-7073 Commodity Transportation.xls Voyage Log 7_1_2006 thru 6_30_2007.xls NCSPA Cargo Forecasts.pdf



1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1415

RECORD OF TELEPHONE CONVERSATION

DATE: 7/2/08		PROJECT NO. 31825110	
RECORDED BY: Susan Shelingoski		OWNER/CLIENT: NCTurnpike Authority	
TALKED WITH: Stephanie Ayers		FROM: Susan Shelingoski	
NATURE OF CALL (INCOMING OR OUTGOING) Outgoing			
ROUTE TO: Project File	FOR INFORMATION		FOR ACTION
	David Griffin, URS Tracy Roberts, HNTB		
MAIN SUBJECT OF CONVERSATION: Port data – vessels and commodities			

I called Stephanie Ayers (public relations director for the port) at 910-251-7073 to inquire about obtaining port vessel and commodity data for use in the bridge location study. I also asked about the movement of the cranes and the height of the Progress Energy Transmission lines. She informed me that McKim and Creed performed a survey of the channel and the height of the lines while the cranes were being moved up-river.

She gave me John Lenfestey's number 910-251-5673 at the port. He was in charge of the crane movement project.

Stephanie later emailed a response to our conversation that contained the voyage log for FY07 as well as commodities and the cargo forecasts for the coming years. They are saved in the project file under P:\Jobs3\31825110_Skyway\Data Collection\Ports Data. The Port of Wilmington is port # 11.

(Name and Title)



1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1415

RECORD OF TELEPHONE CONVERSATION

DATE: 8/12/08		PROJECT NO. 31825110	
RECORDED BY: Joanna Harrington		OWNER/CLIENT: NCTurnpike Authority	
TALKED WITH: Stephanie Ayers		FROM: Joanna Harrington	
NATURE OF CALL (INCOMING OR OUTGOING) Outgoing			
ROUTE TO: Project File	FOR INFORMATION		FOR ACTION
	David Griffin, URS Tracy Roberts, HNTB		
MAIN SUBJECT OF CONVERSATION: Military vessel activity at Port of Wilmington			

I called Stephanie Ayers (public relations director for the port) at 910-251-7073 to inquire about the amount of military vessel activity at the Port of Wilmington. Sunny Point Ocean Terminal is just downstream of the port, and it is important for the purposes of the bridge study to note whether naval vessels ever travel to the port for activity or repair.

According to Ms. Ayers, there is absolutely no military vessel activity at the port. Sunny Point has its own repair terminal for the naval vessels.

(Name and Title)



Stephanie_Ayers@ncports.com

01/07/2009 02:56 PM


To joanna_harrington@urscorp.com

cc Stephanie_Ayers@ncports.com

bcc

Subject Strategic Seaports

History:

 This message has been replied to and forwarded.

Joanna,

Let me know if you need more than what is attached to demonstrate the ports relationship with the military in NC.

Thanks,
Stephanie Ayers
Director of Planning & Development
North Carolina State Ports Authority



910-251-7073 White Paper Strategic Seaports 1-7-09.pdf



1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1415

RECORD OF TELEPHONE CONVERSATION

DATE:03/03/09		PROJECT NO. 31825110	
RECORDED BY: David Griffin		OWNER/CLIENT: NC Turnpike Authority	
TALKED WITH: Camilla Herlevich		FROM: North Carolina Coastal Land Trust	
NATURE OF CALL (INCOMING OR OUTGOING) Outgoing			
ROUTE TO: Project File	FOR INFORMATION		FOR ACTION
	Tracy Roberts, NCTA/HNTB Jennifer Harris, NCTA Joanna Harrington,		
MAIN SUBJECT OF CONVERSATION: NCCLT properties and Cape Fear Skyway			

I called Camilla for several reasons: 1) to make sure she was aware that the Cape Fear Skyway studies were active; and 2) to obtain current data regarding NCCLT "properties."

I told Camilla we had spoken in early to mid-2006 when scoping meetings were taking place. She seemed surprised to learn that the environmental studies were still underway as she thought they had been terminated due to the gap funding results of the traffic-revenue forecasts. We discussed the study area and I asked if she could send us a map of NCCLT properties, preferably in PDF format. She said yes but that the NCCLT was very busy. She asked me to send her an e-mail that she could forward to a staff member who might help with this. I told her I would and that I would also send a PDF of the study area map so she would be aware of our area of interest. We also discussed the feasibility study alignment and its history.

Camilla advised that the NCCLT had recently acquired Clarendon Plantation. They already have an area to the south along Town Creek.

I asked about meeting with her some time soon to discuss how NCCLT's "protection" of these properties affects locating study corridors – are there constraints and if so, to what degree. I explained further that our real interest was in constraints to the point where a corridor would result in a fatal flaw. She welcomed the opportunity to meet with us at some point.

She also suggested that we contact the Cape Fear Arch Conservation Collaboration, a group of state, local and non-profits with interest in protecting resources in this area. Currently they have interest in the NCIP and I-73 corridor to name a few. She suggested we might want to give a presentation at one of their meetings. They meet every three months. I asked when the next meeting would be – she said "They just met so about three months." I offered May-June as a timeframe – she affirmed.

I expressed appreciation for her time and told her I would be in touch in the near future.

(On same day, I sent Camilla an email to Camilla@coastallandtrust.org that included a map of the study area.)

David A. Griffin
Project Manager

(Name and Title)

receive this message in error or are not the intended recipient, you should not retain, distribute, disclose or use any of this information and you should destroy the e-mail and any attachments or copies.

----- Forwarded by David Griffin/Morrisville/URSCorp on 03/16/2009 11:23 AM -----



"Jennifer Rogers"
<jennifer@coastallandtrust.org>
03/16/2009 11:09 AM

To <david_griffin@urscorp.com>
cc
Subject FW: NCCLT shapefile

Sorry about not sending all the files...I just left one out...let me know if this works or doesn't. Thanks.

Jen

From: Jennifer Rogers [mailto:jennifer@coastallandtrust.org]
Sent: Thursday, March 12, 2009 3:52 PM
To: 'david_griffin@urscorp.com'
Subject: NCCLT shapefile

Attached is the shapefile that shows all of our properties; thank you.

Jennifer Rogers
Stewardship Biologist
North Carolina Coastal Land Trust
131 Racine Drive, Suite 101
Wilmington, NC 28403
910/790-4524
www.coastallandtrust.org



NCCLT_prop_info.shp



NCCLT_prop_info.shp.xml



NCCLT_prop_info.shx



NCCLT_prop_info.dbf



NCCLT_prop_info.prj



NCCLT_prop_info.sbn



Stephanie_Ayers@ncports.com

04/28/2009 01:06 PM

To Joanna_Harrington@URSCorp.com

cc

bcc

Subject Re: economic impacts

History:



This message has been replied to and forwarded.

Joanna,

Attached, please find a briefing book with detailed information about the ports, its importance, our competitors, etc. This was compiled specifically for the NC International Terminal, but I think it includes details that you will find useful (pages 1 - 7).

Also find our Annual Audit by the NC State Auditor's Office (we don't have an "Annual Report").

<http://www.ncauditor.net/pub2/ReportsList.aspx?DocType=1&AuditID=2>

RE: specific truck routes. There are not designated truck routes, although I can tell you from my experience most trucks leaving our port in Wilmington take Shipyard Boulevard to either Carolina Beach Road (north) to the Memorial Bridge (to access 421, 74/76, 17), or they take Shipyard Boulevard to College Road (north) to I-40.

Please let me know if I can provide any additional information.

Thanks,
Stephanie

Stephanie Ayers
Director of Planning & Development
North Carolina State Ports Authority
910-251-7073

Joanna_Harrington@URSCorp.com

04/28/2009 10:11 AM

To Stephanie_Ayers@ncports.com

cc

Subject Re: economic impacts

Hi Stephanie!

We're still working on the Purpose and Need Statement for the Cape Fear Skyway, and need some information about the Port if it's available. I've looked on the website, but was wondering if there is a more detailed "annual report" type document that details the state of the Port and its main competitors along the east coast, as well as explaining its importance. Also - is there any data available on any specific truck routes that trucks utilize when entering and exiting the Port?

Please call me if you'd like to discuss. Thanks in advance,
Joanna

Joanna M. Harrington
Environmental Planner
URS Corporation
1600 Perimeter Park Drive, Suite 400
Morrisville, North Carolina 27560
919.461.1434 (direct)
919.461.1415 (fax)
e-mail: joanna_harrington@urscorp.com

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▼ Stephanie_Ayers@ncports.com

Stephanie_Ayers@ncports.com

03/23/2009 09:29 AM

To joanna_harrington@urscorp.com

cc

economic impacts
Subject

Stephanie Ayers
Director of Planning & Development
North Carolina State Ports Authority

910-251-7073(See attached file: NCITEconomicImpact.pdf)



NCITEconomicImpact.pdf



NCIP Briefing Book FINAL with no cover letter 5_19_08.pdf



Stephanie_Ayers@ncports.com

05/08/2009 11:04 AM

To Joanna_Harrington@URSCorp.com

cc

bcc

Subject Re: economic impacts

History:



This message has been replied to and forwarded.

Joanna,

I'd love to see what you have from 2002 to see if it compares to what I'm about to send you!

I have compiled the truck/rail moves for our Port of Wilmington cargoes (Vopak is excluded) for the first three months of 2009 (1Q09). This spreadsheet details by type of commodity. I believe this to be a comprehensive list. Please let me know if you have any questions/concerns.

Here's a quick glance:

	Gate Moves	Rail Moves
Jan-09	15760	94
Feb-09	16368	80
Mar-09	16754	213
Total	48882	387

Thanks,
Stephanie

Stephanie Ayers
Director of Planning & Development
North Carolina State Ports Authority
910-251-7073

Joanna_Harrington@URSCorp.com

05/05/2009 01:24 PM

To Stephanie_Ayers@ncports.com

cc

Subject Re: economic impacts

Thanks Stephanie!

Joanna M. Harrington
Environmental Planner
URS Corporation
1600 Perimeter Park Drive, Suite 400
Morrisville, North Carolina 27560
919.461.1434 (direct)
919.461.1415 (fax)
e-mail: joanna_harrington@urscorp.com

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▼ Stephanie_Ayers@ncports.com

Stephanie_Ayers@ncports.com

05/05/2009 11:26 AM

To Joanna_Harrington@URSCorp.com

cc

Re: economic impacts
Subject

Joanna,

I am working on your request and hope to have a response by the end of the week.

Thanks,
Stephanie Ayers
Director of Planning & Development
North Carolina State Ports Authority
910-251-7073
Joanna_Harrington@URSCorp.com

05/04/2009 01:53 PM

To Stephanie_Ayers@ncports.com
cc
Subject Re: economic impacts

Does the Port have any specific information on how many freight shipments into and out of the Port are handled by truck vs. how many by rail? We have a study done in 2002 by Moffat & Nichol that has projections for 2005 and 2010 by mode, and I wasn't sure if there were any updates.

Again - thank you very much for all of the information you've provided thus far. I apologize for all of the inquiries!
Joanna

Joanna M. Harrington
Environmental Planner
URS Corporation
1600 Perimeter Park Drive, Suite 400
Morrisville, North Carolina 27560
919.461.1434 (direct)
919.461.1415 (fax)
e-mail: joanna_harrington@urscorp.com

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▼ Stephanie_Ayers@ncports.com
Stephanie_Ayers@ncports.com

04/28/2009 01:06 PM

Joanna_Harrington@URSCorp.com

To

cc

Re: economic impacts

Subject

Joanna,

Attached, please find a briefing book with detailed information about the ports, its importance, our competitors, etc. This was compiled specifically for the NC International Terminal, but I think it includes details that you will find useful (pages 1 - 7).

Also find our Annual Audit by the NC State Auditor's Office (we don't have an "Annual Report").

<http://www.ncauditor.net/pub2/ReportsList.aspx?DocType=1&AuditID=2>

RE: specific truck routes. There are not designated truck routes, although I can tell you from my experience most trucks leaving our port in Wilmington take Shipyard Boulevard to either Carolina Beach Road (north) to the Memorial Bridge (to access 421, 74/76, 17), or they take Shipyard Boulevard to College Road (north) to I-40.

Please let me know if I can provide any additional information.

Thanks,
Stephanie

Stephanie Ayers
Director of Planning & Development
North Carolina State Ports Authority
910-251-7073
Joanna_Harrington@URSCorp.com

04/28/2009 10:11 AM

To Stephanie_Ayers@ncports.com
cc
Subject Re: economic impacts

Hi Stephanie!

We're still working on the Purpose and Need Statement for the Cape Fear Skyway, and need some information about the Port if it's available. I've looked on the website, but was wondering if there is a more detailed "annual report" type document that details the state of the Port and its main competitors along the east coast, as well as explaining its importance. Also - is there any data available on any specific truck routes that trucks utilize when entering and exiting the Port?

Please call me if you'd like to discuss. Thanks in advance,
Joanna

Joanna M. Harrington
Environmental Planner
URS Corporation
1600 Perimeter Park Drive, Suite 400
Morrisville, North Carolina 27560
919.461.1434 (direct)

919.461.1415 (fax)

e-mail: joanna_harrington@urscorp.com

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▼ Stephanie_Ayers@ncports.com

Stephanie_Ayers@ncports.com

03/23/2009 09:29 AM

joanna_harrington@urscorp.com

To

cc

economic impacts

Subject

Stephanie Ayers
Director of Planning & Development
North Carolina State Ports Authority



910-251-7073(See attached file: NCITEconomicImpact.pdf) (See attached file:
NCITEconomicImpact.pdf)(See attached file: NCIP Briefing Book FINAL with no cover letter



5_19_08.pdf) (See attached file: NCITEconomicImpact.pdf)(See attached file:

NCIP Briefing Book FINAL with no cover letter 5_19_08.pdf)



NCITEconomicImpact.pdf

NCIP Briefing Book FINAL with no cover letter 5_19_08.pdf Traffic counts POW (1Q09) May 8_2009.xls



1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1415

RECORD OF TELEPHONE CONVERSATION

DATE:5/11/09		PROJECT NO. 31825110	
RECORDED BY: Joanna Harrington		OWNER/CLIENT: NCTurnpike Authority	
TALKED WITH: Stephanie Ayers		FROM: Joanna Harrington	
NATURE OF CALL (INCOMING OR OUTGOING) Outgoing			
ROUTE TO: Project File	FOR INFORMATION		FOR ACTION
	David Griffin, URS Tracy Roberts, HNTB		
MAIN SUBJECT OF CONVERSATION: Rail vs. truck traffic at Port of Wilmington			

David Griffin and I spoke to Stephanie Ayers (public relations director for the port) of the North Carolina State Ports Authority to discuss the rail and truck movement data she had given URS on 5/8/09. We explained that in order to address the purpose and need for the Cape Fear Skyway project, it is important to make certain conclusions about truck vs. rail movements to and from the Port of Wilmington. We discussed the data with Stephanie, and made the conclusion that truck moves into and out of the Port gates are significantly higher than that of rail cars. We reviewed the data to ensure there was an understanding of its meaning. Stephanie clarified the data explaining that a truck gate move equals a truck exiting or entering through the gate, including those that are empty. A rail move equals a single train car that enters or exits the Port. The major commodities handled by rail include steel, lumber, and wood pulp and are bulk and breakbulk. Containers are only handled by truck at the Port, and there are no current plans to expand the rail yard. This is due to cost. Rail could be used for containers if the Port was able to generate enough volume to negotiate with CSX; however, CSX is the only rail service provider to Wilmington, which compromises competitiveness to some degree. At present, it is not cost-effective for the Port to use rail for the movement of containerized freight. Stephanie also discussed the lack of intermodal connectivity between the freight coming into the Port and the trucks and rail that enter and exit the Port.

(Name and Title)



"Roberts, Tracy"
<tracy.roberts@ncturnpike.org>
08/10/2009 04:21 PM

To "Griffin,David" <david_griffin@urscorp.com>
cc "Joanna_Harrington@URSCorp.com"
<Joanna_Harrington@URSCorp.com>
bcc
Subject FW: Military movements at the Port of Wilmington

FYI

From: Mike.Kozlosky@wilmingtonnc.gov [mailto:Mike.Kozlosky@wilmingtonnc.gov]
Sent: Monday, August 10, 2009 4:10 PM
To: Rob.Ayers@dot.gov
Cc: Jill.Stark@dot.gov; Harris, Jennifer; Roberts, Tracy; George.Hoops@dot.gov;
Mike.Kozlosky@wilmingtonnc.gov; York, Shane D
Subject: Fw: Military movements at the Port of Wilmington

Rob,

The military has moved 816,866.41 tons of military equipment through the Port of Wilmington from 1/1/03 and 8/10/09. Do you and I need to schedule a conference call for later in the week to discuss the Purpose and Need that we were going to begin to develop?

Mike Kozlosky
Executive Director
Wilmington MPO
910-342-2781
www.wmpo.org

----- Forwarded by Mike Kozlosky/wilm on 08/10/2009 04:04 PM -----

Stephanie_Ayers@ncports.com

08/10/2009 03:54 PM

To Mike.Kozlosky@wilmingtonnc.gov
cc Steve_Jackson@ncports.com
Subject Re: Military movements at the Port of Wilmington

Mike,

Here is the tonnage of military equipment that has moved through the Port of Wilmington from 1/1/2003-8/10/2009. This is in measurement ton (volume vs. weight) and is how the military measures cargo movement for billing purposes. Hope this helps. Please let me know if you need greater detail.

816,866.41 measurement tons

The point of contact for military movements through NC ports (for Camp LeJeune and Ft. Bragg):

Kristine Sports
Operations Manager
841st Transportation Battalion
Charleston

Kristine.Sports@us.army.mil
843-743-0544 ext 20

Thanks,
Stephanie

Stephanie Ayers
Director of Planning & Development
North Carolina State Ports Authority
910-251-7073

Mike.Kozlosky@wilmingtonnc.gov

08/08/2009 10:48 AM

To: "Stephanie Ayers" <stephanie_ayers@ncports.com>
cc

Subject: Re: Military movements at the Port of Wilmington

That will be fine. Thanks for all of your help.
Sent via Blackberry

From: Stephanie Ayers [stephanie_ayers@ncports.com]
Sent: 08/07/2009 11:43 AM AST
To: Mike Kozlosky
Subject: Re: Military movements at the Port of Wilmington

Report will be ready Monday- is that too late?
Stephanie

Sent from my iPhone

On Aug 5, 2009, at 1:47 PM, Mike.Kozlosky@wilmingtonnc.gov wrote:

That was the way I understood it. We will likely see a continuing resolution and I will have to try to find another source of funding to purchase the property.

Mike Kozlosky
Executive Director
Wilmington MPO
910-342-2781
www.wmpo.org

Stephanie_Ayers@ncports.com

08/05/2009 01:44 PM

To Mike.Kozlosky@wilmingtonnc.gov
cc laura_godwin@ncports.com
SubjectRe: Military movements at the Port of Wilmington

Mike,

As we understand it, SAFETEA-LU is done for the year so we didn't submit the letter. However, we are happy to send it on your behalf if you have heard something different.

Thanks,
Stephanie Ayers
Director of Planning & Development
North Carolina State Ports Authority
910-251-7073

Mike.Kozlosky@wilmingtonnc.gov

08/05/2009 11:54 AM

To Stephanie_Ayers@ncports.com
cc
SubjectRe: Military movements at the Port of Wilmington

Thank you very much. I really appreciate it.

Do you know if Laura ever wrote the letter to Senator Hagan's office regarding the Cape Fear Skyway?

Mike Kozlosky
Executive Director
Wilmington MPO
910-342-2781
www.wmpo.org

Stephanie_Ayers@ncports.com

08/05/2009 11:13 AM

To Mike.Kozlosky@wilmingtonnc.gov
cc

Subject Military movements at the Port of Wilmington

Mike,

I'm working up a report that will provide you with the tonnage of military material that has been moved through the Port of Wilmington over the last few years. Also, I should be able to provide you with a military POC in Charleston (for Camp LeJeune and Fort Bragg) in case you need to follow up. I hope to



September 11, 2009

Mr. Mike Kozlosky
Executive Director
Wilmington Metropolitan Planning Organization
305 Chestnut Street, Floor 4
Wilmington, NC 28401

RE: Cape Fear Skyway Bridge

Dear Mr. Kozlosky:

The purpose for this letter is to indicate support for the Cape Fear Skyway Bridge project by the North Carolina State Ports Authority (the Authority). The Cape Fear Skyway Bridge will complement the projected growth of freight traffic at the Port of Wilmington and additionally, position North Carolina's ports to serve additional freight demands at the North Carolina International Terminal. Completion of the Cape Fear Skyway Bridge project will closely coincide with the expansion of North Carolina's container terminal in Brunswick County, providing needed capacity for port traffic well into the future.

During the recent economic crisis, the Authority has maintained an aggressive business development philosophy that has resulted in the addition of two new container lines calling the Port of Wilmington. Richmond, VA-based Independent Container Lines (ICL) and Maersk, the world's largest shipping company, made their first calls to Wilmington in early 2008. With this new business, the Port of Wilmington currently handles in excess of 150,000 TEUs (twenty-foot equivalent units) annually. The Compound Annual Growth Rate (CAGR) associated with container activity in Wilmington for FY 2002-2003 through FY 2008-2009 is 12 percent.

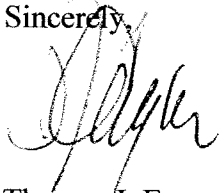
The Authority's ability to capture new business during the depressed economy has lead to an optimistic, albeit cautious, market forecast for the next decade. According to forecasting models provided by an independent, third party firm contracted by the Authority to construct port-specific market forecasts, the Port of Wilmington is in a position to capture as many as four additional vessel services by 2018, each adding 20,000 TEU throughput for the facility. If the Authority achieves that market forecast, at a minimum, an additional four vessel calls per week can be anticipated. That translates to nearly 400,000 TEUs annually through the Port of Wilmington by year 2018. The North Carolina International Terminal would then be expected to come online, with an expected capacity of two to three million TEUs by 2025.

NORTH CAROLINA STATE PORTS AUTHORITY

P.O. Box 9002, Wilmington NC 28402 ♦ Tel: 910-343-6232 ♦ Fax: 910-343-6237 ♦ e-mail: Tom_Eagar@NCPORTS.com

The Cape Fear Skyway Bridge has been formally recognized by the Authority as one of the top Division 3 transportation priorities. The Cape Fear Skyway Bridge will be needed to support the existing Port of Wilmington traffic, as well as traffic from the proposed North Carolina International Terminal in Brunswick County. Additionally, completion of the Cape Fear Skyway Bridge offers an opportunity to provide a substantial, sustainable improvement in the overall capacity of the national freight transportation system.

Sincerely,

A handwritten signature in black ink, appearing to read 'T. Eagar', written over a faint circular stamp.

Thomas J. Eagar
Chief Executive Officer

cc: David Joyner
North Carolina Turnpike Authority

NORTH CAROLINA STATE PORTS AUTHORITY

P.O. Box 9002, Wilmington NC 28402 ♦ Tel: 910-343-6232 ♦ Fax: 910-343-6237 ♦ e-mail: Tom_Eagar@NCPORTS.com



**North Carolina Department of Cultural Resources
State Historic Preservation Office**

Peter B. Sandbeck, Administrator

Beverly Eaves Perdue, Governor
Linda A. Carlisle, Secretary
Jeffrey J. Crow, Deputy Secretary

Office of Archives and History
Division of Historical Resources
David Brook, Director

September 23, 2009

MEMORANDUM

TO: Matt Wilkerson
Office of Human Environment
NCDOT Division of Highways

FROM: Peter Sandbeck *cc'd for Peter Sandbeck*

SUBJECT: Draft #3: Terrestrial Cultural Resources Background Report for the Cape Fear Skyway in
New Hanover and Brunswick Counties, U-4738, CH 05-2935

Thank you for the opportunity to review the above referenced report. It is well written and develops the several contexts for the prehistory and history of the study area.

In terms of archaeological resources, there are actually seven National Register eligible sites in the New Hanover County portion of the study area. Site 31NH802 has been evaluated and recommended as National Register-eligible (Bibliography ID# 6342). Data recovery within a portion of that site is taking place this summer. Data recovery has also been completed at 31NH747 and 31NH456/456*, and the final report accepted (Bib. ID# 6108).

The information contained in the architectural section appears to be correct. We would note that Brunswick County is about to undertake a countywide survey of historic and/or architectural resources. You may wish to contact the principal investigator:

J. Daniel Pezzoni, Architectural Historian & Preservation Consultant
6 Houston Street
Lexington, VA 24450
Phone: 540/464-5315
Fax: 540/464-5619
E-mail: glespezzoni@rockbridge.net

We would also request three additional copies of the draft report as two copies are needed for the State Historic Preservation Office files and an additional copy for the Office of State Archaeology.

We look forward to working with your agency as plans progress and corridor alternatives are identified.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment please contact Renee Gledhill-Earley, environmental review coordinator, at 919/807-6579. In all future communication concerning this project, please cite the above referenced tracking number.

cc: Mary Pope Furr, NCDOT



North Carolina Department of Environment and Natural Resources

Division of Water Quality
Coleen H. Sullins
Director

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

March 2, 2010

MEMORANDUM

MAR 3 2010

To: Jennifer Harris, NCTA

From: David Wainwright, NC Division of Water Quality, Central Office *DW*

Subject: Comments on the Draft Section 6002 Coordination Plan for the Cape Fear Skyway Bridge and study area for the proposed Cape Fear Skyway Bridge, STIP U-4738.

Based on information provided, the DWQ submits the following comments:

Section 6002 Coordination Plan:

1. The DWQ believes that the NCTA should adhere to the "Memorandum of Understanding, Section 404 of the Clean Water Act and National Environmental Policy Act, Integration Process for Surface Transportation Projects in North Carolina" and follow the agreed upon Merger Process outlined therein. The agreement was signed by four primary signatories, including the NCDOT, in May and June of 2005. The Memorandum states that the procedures outlined in the document "...will generally apply to all new location projects and all projects that require an individual permit under Section 404 of the Clean Water Act." The project that the NCTA is proposing is a new location project and, based on anticipated impacts, will require an individual permit. Therefore, the DWQ strongly believes that the NCTA should follow the agreed upon Merger Process for this project.
2. Section 1.2, bullet number two, makes reference to "Riparian Buffer Authorizations." Currently, the NCDWQ does not have riparian buffer rules in place within the Lower Cape Fear River Basin.
3. Section 7.3, Determination of Purpose and Need Statement, states that the Purpose and Need Statement will be refined, as appropriate, based on input from the Participating Agencies and the public. The DWQ feels that once a Purpose and Need Statement has been defined and agreed to by all agencies involved, it should not be modified. The project should be planned, designed, and decisions made on the statement. The statement should not evolve to reflect the desired project goals. If the statement is thoroughly considered and thought through before the project decision making begins, then it should not need to be modified.
4. Section 9.4.3 discusses bridging decisions. Although not expressly stated, a site visit to potential crossings may be preferred or necessary. DWQ staff generally does not feel comfortable making bridging decisions without first visiting the site. Further discussions regarding observations, decisions, and any other issues pertaining to the field meeting can occur at a later TEAC meeting.

5. Section 12.3 discusses jurisdictional determinations and states that the width of the corridor within which jurisdictional determinations are made will be determined on a project-by- project basis. This Partnership Agreement is intended to be for the Cape Fear Skyway Bridge; a specific project. This statement does not seem to be appropriate for this document, and should be more specific. If the corridor width(s) have not been determined at this time or if they will vary by alternative, it should be noted, and not left as a blanket "project-by-project" statement.
6. The NCTA is generally allowing agencies thirty days to review and submit comments. The State requires some environmental documents to be distributed to state agencies through the State Clearinghouse. In cases where this is required, reviewing agencies cannot take full advantage of the thirty day review time (and may have as little as two weeks). The DWQ would like for the NCTA to keep this in mind, and perhaps allow more time for agencies to review documents that are required to be distributed through the State Clearinghouse. Such a practice would be advantageous to the NCTA by allowing sufficient time for these agencies to give full and proper review of these documents.

Project Study Area:

The DWQ has no issues with the proposed study area corridor. However, the DWQ would like to make the NCTA aware of the following:

1. Preliminary analysis of the project reveals the potential for multiple impacts to perennial streams and jurisdictional wetlands in the study area. More specifically, your project may impact:

Stream Name	Stream Classification(s)	Stream Index Number
Sturgeon Creek	C;Sw	18-77-1
Silver Stream Branch	C;Sw	18-76-1-1
Redmond Creek	SC;Sw	18-77-2
Piney Branch	C;Sw	18-77-3-1
NE Cape Fear River	SC;Sw	18-76-(61)
Jumping Run Branch	C;Sw	18-76-1-3
Jackeys Creek	C;Sw	18-77-3
Greenfield Lake	C;Sw	18-76-1
Greenfield Creek	SC;Sw	18-76
Clay Bottom Branch	C;Sw	18-76-1-2
Cape Fear River	SC	18-(71)
Brunswick River	SC	18-77
Alligator Creek	SC;Sw	18-75
Squash Branch	C;Sw	18-76-1-4
Silver Lake	C;Sw	18-82-1
Morgan Branch	C;Sw	18-81-7
Mallory Creek	C;Sw	18-78
Little Mallory Creek	C;Sw	18-78-1
Hewletts Creek	SA;HQW	18-76-26
Goodland Branch	C;Sw	18-81-8
Bishop Branch	C;Sw	18-81-7-1
Barnard Creek	C;Sw	18-80

Further investigations at a higher resolution should be undertaken to verify the presence of other streams and/or jurisdictional wetlands in the area.

2. There is a large number of wetland areas located within your proposed project corridor. Impacts to these areas should be avoided to the best extent practicable. Satisfactory avoidance and minimization will need to be shown before the DWQ will issue a 401 water Quality Certification.
3. The Cape Fear River is class SC; 303(d) waters of the State. The Cape Fear River is on the 2008 303(d) list for aquatic life impairment due to turbidity, nickel, and copper. The NCDWQ is very concerned with sediment and erosion impacts that could result from this project. The NCDWQ recommends that the most protective sediment and erosion control BMPs be implemented in accordance with *Design Standards in Sensitive Watersheds* to reduce the risk of turbidity and metals runoff to the Cape Fear River. The NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.
4. The DWQ prefers onsite mitigation for impacts to streams and wetlands when practicable and feasible. Once a preferred alternative is selected, the DWQ strongly encourages the NCTA to investigate and consider all possible onsite mitigation possibilities.

Thank you for requesting our input at this time. NCDOT is reminded that issuance of a 401 Water Quality Certification requires that appropriate measures be instituted to ensure that water quality standards are met and designated uses are not degraded or lost. If you have any questions or require additional information, please contact David Wainwright at (919) 715-3415.

cc: Brad Shaver, US Army Corps of Engineers, Wilmington Field Office
Chris Militscher, Environmental Protection Agency (electronic copy only)
Travis Wilson, NC Wildlife Resources Commission (electronic copy only)
Steve Sollod, Division of Coastal Management
File Copy



Stephanie_Ayers@ncports.com

03/09/2010 04:41 PM

To Joanna_Harrington@URSCorp.com

cc David_Griffin@URSCorp.com

bcc

Subject Contact information

History:

✉ This message has been replied to.

David and Joanna,

Good discussion today. Here is starting contact information for other terminals north of the NCPSA, as we discussed:

Colonial Oil,
Bob Welch, 910-251-1020
1002 South Front Street
Wilmington, NC 28401-5629
Main: (910) 762-2271

Amerada Hess Corp, Dan Hagain

1312 South Front Street

Wilmington

Main: (910) 763-5122

KinderMorgan

2005 North 6th Street
Wilmington, NC 28401-2843
Main: (910) 762-8588

Thanks,
Stephanie Ayers
Director, Planning & Development
NC State Ports Authority
910-251-7073 (office)
910-233-4190 (mobile)



1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1415

RECORD OF TELEPHONE CONVERSATION

DATE:3/09/10		PROJECT NO. 31825110	
RECORDED BY: Joanna Harrington		OWNER/CLIENT: NC Turnpike Authority	
TALKED WITH: NCSPA		FROM: Joanna Harrington	
NATURE OF CALL (INCOMING OR OUTGOING) Outgoing			
ROUTE TO: Project File	FOR INFORMATION		FOR ACTION
	Tracy Roberts, HNTB		
MAIN SUBJECT OF CONVERSATION: Navigation/Bridging issues with replacing Cape Fear Memorial Bridge			

David Griffin and I spoke to Stephanie Ayers (Director, Planning and Development), Steve Jackson (General Terminal Operations Group), Jeff Miles (Chief Operating Officer), and Mark Blake (Director of Engineering) of the North Carolina State Ports Authority (NCSPA) via conference call. The purpose of the discussion was to get feedback from the NCSPA on navigation and bridging issues of the Cape Fear River in the vicinity of the Port of Wilmington.

David explained that as part of the National Environmental Policy Act process a number of alternatives will be considered for the Cape Fear Skyway project, including the upgrade of existing US 17 Business, and alternatives in the vicinity of existing US 17 Business. This could include a crossing of the Cape Fear River that would replace or possibly in addition to the existing Cape Fear Memorial Bridge. David explained that an evaluation is being made with respect to a possible crossing of the river between the Port and the existing Cape Fear Memorial Bridge.

David asked NCSPA about the current and future use of the Port of Wilmington property at the north end that appears to be vacant and the navigational channel.

A discussion was held about the vacant properties owned by the Port at the north end and the potential for these properties to be used for bridge piers or bents and roadway right-of-way for a new bridge. Stephanie confirmed that the tank farm just north of the Port is owned by the NCSPA, as well as the two undeveloped parcels north of the Port. These parcels are planned for future development of the Port and if a bridge or road were to go through these parcels, they would constrict or restrict any future development. The NCSPA would be willing to consider this alignment, however noting that it would be an obstacle to future development. Stephanie added that an alignment north of the port or in the vicinity of existing US 17 Business would not be compliant with the Wilmington Long Range Transportation Plan which calls for a new facility located south of the Port and adding a new crossing of the Cape Fear River for port access, evacuation, and reduction of traffic into the downtown area of Wilmington.

Stephanie explained that the wide portion of the navigational channel across from the northern end of the Port property is used as a turning basin for vessels and there are plans with the USACE to widen the turning basin even further. Consequently, the entire width of the navigational channel limits would require the respective vertical clearances, now charted as 169 feet.

Stephanie explained that the terminal is set up into three primary areas: container to the south, breakbulk in the middle, and bulk to the north. Stephanie further noted that Burnett Boulevard is closed to truck traffic from the north gate southward to the south gate. Therefore, if a new bridge crossed the area north of the Port, container trucks would still have to travel on US 421/Carolina Beach Road around the Sunset Park neighborhood to access the south gate.



1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1415

Stephanie referenced our meeting last year with Progress Energy and noted that Progress Energy has recently told several representatives of the NCSPA that the dual power line crossing the Cape Fear River will have one line moved south, and preliminary planning indicated that the new structures may be taller than the existing towers. By moving one of the existing lines to the new location ½ mile down river, the existing line could potentially be pulled more taut, which would lead to 15 to 20 feet of additional vertical clearance than exists now. She suggested that URS coordinate with Progress Energy on this issue. *[Note: This could result in a minimum vertical clearance recommendation of 184-189 feet in lieu of 169 feet.]*

There was minimal discussion about the proposed NCIT project and Stephanie indicated that the Port of Wilmington would remain open after NCIT becomes operational. Discussion with the NCSPA also included the types of facilities located upriver from the port including Hess, Colonial, and KinderMorgan terminals.



North Carolina Department of Environment and Natural Resources
Division of Coastal Management

Beverly Eaves Perdue
Governor

James H. Gregson
Director

Dee Freeman
Secretary

March 11, 2010

Mr. Steven D. DeWitt, P.E.
NC Turnpike Authority
1578 Mail Service Center
Raleigh, North Carolina 27699-1578

RE: Cape Fear Skyway Project, STIP U-4738
Participating Agency Invitation

Dear Mr. DeWitt:

The NC Division of Coastal Management (DCM) received the NC Turnpike Authority's (NCTA) invitation to be a participating agency for the planning of the proposed Cape Fear Skyway project in Brunswick and New Hanover Counties.

This project is located within the 20 counties that are under the jurisdiction of the North Carolina Coastal Area Management Act (CAMA). It is anticipated that the Cape Fear Skyway project will impact Coastal Shorelines, Public Trust Areas, and Estuarine Waters, Areas of Environmental Concern (AECs) and, therefore, a CAMA Major Development Permit will be required. DCM recommends that the AEC impacts and the CAMA permitting requirements for the project be addressed in the Draft Environmental Impact Statement (DEIS).

It is our intention to participate in the planning of this project and we accept your invitation to be a Participating Agency. Please refer to the attached signed invitation. If you have any questions or concerns, please contact me at (919) 733-2293 x 230, or via e-mail at steve.sollod@ncdenr.gov. Thank you for your consideration of the North Carolina Coastal Management Program.

Sincerely,

Steven D. Sollod
Transportation Project Coordinator

Attachment: Signed Invitation

cc: Ms. Jennifer Harris, NCTA
Mr. George Hoops, FHWA
Mr. Doug Huggett, DCM
Mr. Brad Shaver, USACE

Rocco, Joanna

From: Herndon, Mason <mason.herndon@ncdenr.gov>
Sent: Thursday, April 11, 2013 10:10 AM
To: Harris, Jennifer; Brad.E.Shaver@usace.army.mil; militscher.chris@epamail.epa.gov; gary_jordan@fws.gov; terrance.a.knowles@uscg.mil; Fritz.Rohde@noaa.gov; Gledhill-earley, Renee; Sollod, Steve; Baker, Jessi E; Wilson, Travis W.; Ayers, Stephanie; Mike.Kozlosky@wilmingtonnc.gov; deggert@capefearcog.org
Cc: ron.lucas@dot.gov; Griffin, David; Rocco, Joanna; Roberts, Tracy
Subject: RE: STIP U-4738, Cape Fear Crossing

Jennifer, DWQ does not have any concerns with placing the project in the NEPA/404 Merger Process. I am the correct DWQ representative for the project and will plan to attend the meeting in June to discuss CP1&2.

Thanks!

MH

Mason Herndon
NCDENR, Division of Water Quality
Surface Water Protection/Transportation Permitting
mason.herndon@ncdenr.gov
Phone: (910) 308-4021

E-mail correspondence to and from this address may be subject to the
North Carolina Public Records Law and may be disclosed to third parties.

From: Harris, Jennifer
Sent: Thursday, April 11, 2013 9:32 AM
To: Brad.E.Shaver@usace.army.mil; militscher.chris@epamail.epa.gov; gary_jordan@fws.gov; terrance.a.knowles@uscg.mil; Fritz.Rohde@noaa.gov; Gledhill-earley, Renee; Sollod, Steve; Baker, Jessi E; Wilson, Travis W.; Ayers, Stephanie; Mike.Kozlosky@wilmingtonnc.gov; deggert@capefearcog.org; Herndon, Mason
Cc: ron.lucas@dot.gov; david.a.griffin@urs.com; joanna.rocco@urs.com; Roberts, Tracy
Subject: STIP U-4738, Cape Fear Crossing

Good morning,

It has been a while since we last met, so I'd like to take this opportunity to brief you on the current status of the Cape Fear Skyway (STIP U-4738). The last agency meeting was in May 2011 when we discussed preliminary recommendations for detailed study alternatives. Soon after that meeting, the project was put on hold so that the financial feasibility of the project could be reassessed and so that NCDOT could continue discussions with the Wilmington Urban Area Metropolitan Planning Organization (WMPO) on the alternatives to be carried forward. The WMPO adopted a resolution on December 12, 2012 (attached) that requested the NCDOT and NCTA continue with the project studies and complete the environmental document, letting the NEPA process determine the optimal solution for meeting the project's purpose and need. Therefore, the project was re-initiated in January of this year. It will now be managed by the NCDOT (and not NCTA) with the same project team, and will be called the Cape Fear Crossing which more accurately reflects the alternatives that will be studied in the DEIS (not only focusing on a Cape Fear Skyway). We are working with our consultant, URS Corporation, to resume studies.

As you know, the project is currently operating under the Section 6002 Coordination Plan, and we would like to seek your agreement with placing the project in the NEPA/Section 404 Merger Process. If so, we plan to meet with you in June to have a joint CP 1 & CP 2 meeting, with the goal of obtaining signatures for both of these concurrence points, which have been previously discussed at TEAC meetings.

Please note that Ron Lucas has assumed George Hoops' role as the FHWA representative for the project. We would also like to request confirmation that the following individuals are the correct representatives for each participating agency:

- USACE – Brad Shaver
- USCG – Terry Knowles
- USEPA – Chris Militscher
- USFWS – Gary Jordan
- NMFS – Fritz Rohde
- NCDCCR – Renee Gledhill-Early
- NCDCM – Steve Sollod
- NCDMF – Jessi O'Neal Baker
- NCDWQ – Mason Herndon
- NCWRC – Travis Wilson
- NCSPA – Stephanie Ayers
- Cape Fear RPO – Don Eggert
- WMPO – Mike Kozlosky

Please let me know if you have any concerns with placing the project in the Merger Process and whether you'd be willing to consider signing CP 1 and 2 at a Merger meeting in June.

We look forward to working with you again on this project.

Sincerely,
Jennifer Harris

Jennifer Harris, P.E.

Western Region/Turnpike
Project Development Section Head
Project Development & Environmental Analysis Branch
NC Department of Transportation

Physical Address:
Century Center Bldg. A (Door A4 with/without badge or A10 with badge)
1000 Birch Ridge Drive
Raleigh, NC 27610

Mailing Address:
1548 Mail Service Center
Raleigh, NC 27699-1548

Main Phone (919) 707-6000
Direct Phone (919) 707-6025
Fax (919) 250-4224

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**North Carolina Department of Cultural Resources
State Historic Preservation Office**

Ramona M. Bartos, Administrator

Governor Pat McCrory
Secretary Susan Kluttz

Office of Archives and History
Deputy Secretary Kevin Cherry

May 6, 2015

MEMORANDUM

TO: Mary Pope Furr
Office of Human Environment
NCDOT Division of Highways

FROM: Renee Gledhill-Earley *Renee Gledhill-Earley*
Environmental Review Coordinator

SUBJECT: Historic Structures Survey Report for Cape Fear Crossing, U-4738,
New Hanover and Brunswick Counties, CH 05-2935

Thank you for your letter of April 7, 2015, transmitting the above-referenced report and National Register evaluations. We have reviewed the report and offer the following comments.

We concur that **Hanover Heights Historic District (NH3636)** is eligible for listing in the National Register of Historic Places (NRHP) under Criteria A and C and that the boundaries proposed appear to be appropriate.

We concur that the **Devereux H. Lippitt House/Clarendon House (BW0227)** is eligible for the NRHP under Criterion C, but that the water tower does not have sufficient integrity to contribute to the property. We do not concur with the proposed boundaries as they fail to address the property's eligibility under Criterion D or potential eligibility under Criterion A for agriculture that includes the surrounding landscape.

Questions about the Lake Forest Defense Housing (NH3635) prevent our concurring with the report's assessment of the property.

- The Southern and Northwest sections appear to be eligible under Criterion A for community planning and development as the street layout and building pattern are largely intact. It is less clear if the community is eligible for Criterion C. If the porches and additions that are mentioned in the narrative are on the façade or side elevations of these buildings then those buildings would be noncontributing. If a large number of the resources have these alterations, the community would not be eligible under Criterion C due to a loss of integrity.
- The Northeast section is more problematic. While the street layout and building placement appears to be intact, the houses have all been altered with the addition of porches and the two non-residential buildings by the addition of stucco on their exteriors. Thus, none of the resources would be contributing to the district under Criterion C, which makes the integrity of the area so low that an argument for Criterion A is also unsupported. Given the questions about integrity, a more in-depth assessment of the three sections appears warranted.

Moffitt Village-Vance Section (NH3633) does not appear eligible for listing in the NRHP under Criterion A or C. Several areas on the edges of the community, as originally platted, have been excluded from the district boundary due to a loss of integrity. In addition to these losses, the core section of the development, which included the more institutional buildings, has also been excluded due to a loss of integrity. Excluding these sections of the platted community causes a significant loss of integrity in terms of the designed whole and a loss of amenities and community buildings as originally planned for the community. Further, many alterations have been made to so many of the resources. Most of these alterations would be considered minor in a district with more elaborate architecture, but these houses are boxes with 6/6 sash windows, set fenestration, and a side-gabled roof. When the windows or fenestration are changed that has a major impact on the building. The addition of porches and decks, even very small ones, has an even more dramatic effect on the integrity of the buildings. A large number of these houses have been altered and would be noncontributing in a potential district. On the whole, therefore, this district has low integrity.

Greenfield Lake Park and Gardens (NH1381) does not appear to be eligible for NRHP listing. Most of the built resources are new, moved, or heavily altered, as are many of the landscape features and hardscapes. Therefore, there does not appear to be sufficient integrity for listing.

We concur with the report's findings that the **following properties are not eligible for listing** in the NRHP:

J. C. Roe Elementary School (NH3634)
Pine Valley Estates (NH3677)
Legion Stadium (NH3678)
Moore's Chapel A.M.E. Zion Church (BW0548)

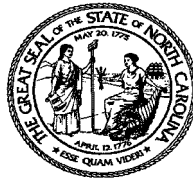
Please note that many of the links included in the text say "Error..." rather than the hyperlink address.

In the section on Greenfield Lake Park's history, we believe the author meant to use "damming" rather than "damning."

Once the issues raised above are resolved, we would appreciate receipt of a spreadsheet that contains all of the properties within the Area of Potential Effects, their name, survey site number, NRHP evaluation and the criteria for which they are eligible. This will be very helpful when considering the effect of the undertaking on the historic properties in the APE.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.



North Carolina Department of Natural and Cultural Resources
State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Pat McCrory
Secretary Susan Kluttz

Office of Archives and History
Deputy Secretary Kevin Cherry

June 13, 2016

MEMORANDUM

TO: Mary Pope Furr
Office of Human Environment
NCDOT Division of Highways

FROM: Renee Gledhill-Earley 
Environmental Review Coordinator

SUBJECT: Historic Structures Survey Report for Cape Fear Crossing, U-4738,
New Hanover and Brunswick Counties, CH 05-2935

Thank you for your letter of May 10, 2016, transmitting revised copies of the above-referenced report. We have reviewed the revised report and concur with the findings of eligibility as presented in the spreadsheet on page 228.

- ◆ We concur that Hanover Heights Historic District (NH3636) **is eligible** for listing in the National Register of Historic Places (NRHP) under Criteria A and C and that the boundaries proposed appear to be appropriate.
- ◆ We concur that the Devereux H. Lippitt House/Clarendon House (BW0227) **is eligible** for the NRHP under Criterion C. It is also likely eligible under Criterion A for agriculture and Criterion D for historic information that the surrounding landscape is likely to yield.
- ◆ We concur that the Southern and Northwest Sections of the Lake Forest Defense Housing (NH3635) **are eligible** for listing under Criteria A and C.
- ◆ We concur that the Moffitt Village-Vance Section (NH3633) and Greenfield Lake Park and Gardens (NH1381) **are not eligible** for listing.

We concur with the report's findings that the following properties are not eligible for listing in the NRHP:

- ◆ J. C. Roe Elementary School (NH3634)
- ◆ Pine Valley Estates (NH3677)
- ◆ Legion Stadium (NH3678)
- ◆ Moore's Chapel A.M.E. Zion Church (BW0548)

We appreciate the inclusion of the spreadsheet on page 228 that contains all of the properties within the Area of Potential Effects, their name, survey site number, NRHP evaluation and the criteria for which they are eligible. It will be very helpful when considering the effect of the undertaking on the historic properties in the APE.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.



AECOM
701 Corporate Center Drive
Raleigh
NC, 27607
USA

T: 919.854.6200
F: 919.854.6259
aecom.com

Project name:
Cape Fear Crossing

Project ref:
U-4738

From:
Joanna Rocco

Date:
May 22, 2017

To:
Jay McInnis and Tracy Roberts
NCDOT Project Development and
Environmental Analysis Branch

CC:
Project File

Record of Conversation

Subject: NCSPA position on project

Stephanie Ayers called me to reiterate the NC State Ports Authority's position on alternatives for the Cape Fear Crossing project. She noted she was aware of the Wilmington Urban Area Metropolitan Planning Organization's (WMPO) recent resolution that will be presented to the board on May 31, 2017 stating the WMPO Board supports Alternative MA and/or NA as the WMPO's preferred alternatives. While NCSPA does not oppose these alternatives, she wanted to let me know that she'd spoken to Mike Kozlosky of the WMPO and requested that there be language regarding navigational clearance requirements of the new bridge over the Cape Fear River, as with those alternatives there would be a navigational constraint to the Port of Wilmington for vessels calling the Port.

Stephanie noted that the NCSPA Board is comparing bridge heights to a new standard due to the expansion of the Panama Canal, most recently the raising of the Bayonne Bridge over the Kill Van Kull in New York, which connects Bayonne, NJ with Staten Island, NY. The bridge currently has a navigational clearance of 155 feet, and the roadbed will be raised to approximately 215 feet of navigational clearance to provide clearance for the new Panamax vessels expected to call the Port Authority of New York and New Jersey of New York. According to Stephanie, the NCSPA is expecting larger vessels in the future, and have already had vessels call the Port that have been larger than any to call the Port in its history.

I asked if the NCSPA is currently doing any research on what types of water draft clearances would be needed for the new Panamax vessels and if they knew of any plans to deepen the navigational channel. She noted the NCSPA is currently conducting a study in that regard now.

I asked Stephanie to send any new reports published by the Port since we are updating our Purpose and Need in Chapter 1 of the DEIS, as well as any updated projections for truck and freight traffic utilizing the Port.

Stephanie will be attending the CP 2A meeting at the division office on May 30, 2017.

Federal Aid #: STPNHF-0017(150) **TIP#:** U-4738 **County:** Brunswick & New Hanover

CONCURRENCE FORM FOR ASSESSMENT OF EFFECTS

Project Description: Cape Fear Crossing

On *May 24, 2017*, representatives of the

- ☒ North Carolina Department of Transportation (NCDOT)
- ☒ Federal Highway Administration (FHWA)
- ☒ North Carolina State Historic Preservation Office (HPO)
- ☐ Other

Reviewed the subject project and agreed on the effects findings listed within the table on the reverse of this signature page.

Signed:

Mary Pope 5/24/2017
Representative, NCDOT Date

Michael C. Dunn 5/24/2017
FHWA, for the Division Administrator, or other Federal Agency Date

Renee Medhill-Earley 5/24/2017
Representative, HPO Date

Federal Aid #: STPNHF-0017(150)

TIP#:U-4738

County: Brunswick & New Hanover

Property and Status	Alternative	Effect Finding	Reasons
USS North Carolina (NR, NHL) Criteria A, B, & C	F/P	Adverse Effect	Visual impacts with new structure 135' in height along alignment of existing US 17 Access to battleship will change with realignment of entrance Access to battleship will change with realignment of entrance and cul-de sac of existing New structure farther downstream than existing US 17 bridge
	V Freeway & V Arterial	No Adverse Effect	No physical impacts; no access changes; no change of use or physical features of a property's setting; visual, atmospheric, or audible intrusions
	B, C, G/Q, J/T, M Avoidance, N Avoidance	No Effect	Approximately 63.69 acres of ROW and 0.14 acres of easement impacts to district and contributing structures will be removed or affected
Wilmington Historic District (NR) Criteria A & C	F/P	Adverse Effect 4(f) Use	Approximately 8 acres of ROW impacts to district and contributing structures will be removed or affected. Impacts to the South Front Street Apartments (contributing) could be minimized with design changes at the intersection of Greenfield and Front streets
	V Freeway & V Arterial	No Effect	No physical impacts; no changes to historical road patterns; no change of use or physical features of a property's setting; visual, atmospheric, or audible intrusions
	B, C, G/Q, J/T, M Avoidance, N Avoidance	Adverse Effect 4(f) Use	Minor visual impacts and roadway improvements stop at edge of district. No physical impacts; no changes to historical road patterns; no change of use or physical features of a property's setting; atmospheric, or audible intrusions
Southern and Northwest Sections of Lake Forest Defense Housing (DE) Criteria A & C	F/P V Freeway & V Arterial	No Adverse Effect	No physical impacts; no changes to historical road patterns; no change of use or physical features of a property's setting; visual, atmospheric, or audible intrusions
	B, C, G/Q, J/T, M Avoidance, N Avoidance	No Effect	No physical impacts; no changes to historical road patterns; no change of use or physical features of a property's setting; visual, atmospheric, or audible intrusions

Sunset Park Historic District (NR) Criteria A & C	F/P V Freeway & V Arterial	No Adverse Effect (possible) 4(f) Use	Approximately 6 acres of ROW impacts, need to restrict impacts to house @ Central Ave and avoid impacts to pergolas and signage @ entrance to district – implement conceptual design which maintains existing curb and gutter on west side of US 421 (Carolina Beach Road) so as to ensure that proposed sidewalk would maintain existing offset (or less) to avoid impacts to neighborhood No physical impacts; no changes to historical road patterns; no change of use or physical features of a property's setting; visual, atmospheric, or audible intrusions
	B, C, G/Q, J/T, M Avoidance, N Avoidance	No Effect	
Hanover Heights Historic District (DE) Criteria A & C	F/P V Freeway & V Arterial	No Adverse Effect 4(f) Use	No physical impacts, no contributing structures impacted; no change of use or physical features of a property's setting; visual, atmospheric, or audible intrusions
	B, J/T, N Avoidance	No Adverse Effect 4(f) Use	Approximately 0.4 acres of easement impacts There are no impacts to the district along US 421 and functional designs show that access would no longer be provided to Holbrook Avenue through the district. However, NCDOT will replant the large plantings in front of the Cape Fear Presbyterian Church along Shipyard Boulevard if impacted during construction No physical impacts; no changes to historical road patterns; no change of use or physical features of a property's setting; visual, atmospheric, or audible intrusions
	C, G/Q, M Avoidance	No Effect	
Wilmington National Guard Armory (DE) Criteria A & C	F/P V Freeway & V Arterial	No Adverse Effect 4(f) Use	No impacts to building or access, but 0.12 acres ROW required (and more if need to shift to minimize impacts to Sunset Park Historic District); no change of use or physical features of a property's setting; visual, atmospheric, or audible intrusion. If necessary, NCDOT will relocate the flag pole and provide a sign perpendicular to US 421 with a font similar to that displayed on the building No physical impacts; no changes to historical road patterns; no change of use or physical features of a property's setting; visual, atmospheric, or audible intrusions
	B, C, G/Q, J/T, M Avoidance, N Avoidance	No Effect	
DH Lippitt House/Clarendon House (DE) Criteria C & D	All alternatives	No Effect	No physical impacts; no changes to historical road patterns; no change of use or physical features of a property's setting; visual, atmospheric, or audible intrusions

Goodman House & Doctor's Office (DE) Criterion C	All alternatives	No Effect	No physical impacts; no changes to historical road patterns; no change of use or physical features of a property's setting; visual, atmospheric, or audible intrusions
--	---------------------	-----------	--

Initialed: NCDOT MPA FHWA WMD HPO BSE

FHWA Intends to use the HPO's concurrence as a basis for a "de minimis" finding for the following properties, pursuant to Section 4(f):
 Wilmington Historic District – Alternatives V Freeway & V Arterial
 Sunset Park Historic District – Alternatives F/P, V Freeway & V Arterial
 Hanover Heights Historic District – Alternatives B, J/T, & N avoidance
 Wilmington National Guard Armory – Alternatives F/P, V Freeway & V Arterial

Federal Aid #: STPNHF-0017(150) **TIP#:** U-4738 **County:** Brunswick & New Hanover

CONCURRENCE FORM FOR ASSESSMENT OF EFFECTS

Project Description: Cape Fear Crossing – **this form supercedes the form signed May 24, 2017**

On February 12, 2019, representatives of the

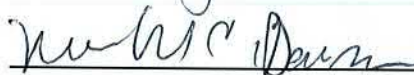
- ☒ North Carolina Department of Transportation (NCDOT)
- ☒ Federal Highway Administration (FHWA)
- ☒ North Carolina State Historic Preservation Office (HPO)
- ☐ Other

Reviewed the subject project and agreed on the effects findings listed within the table on the reverse of this signature page.

Signed:



Representative, NCDOT 2/12/2019
Date



FHWA, for the Division Administrator, or other Federal Agency 2/12/2019
Date



Representative, HPO 2/12/19
Date

Federal Aid #: STPNHF-0017(150)

TIP#: U-4738

County: Brunswick & New Hanover

Property and Status	Alternative	Effect Finding	Reasons
USS North Carolina (NR, NHL) Criteria A, B, & C	V Arterial	No Adverse Effect	Access to battleship will change with realignment of entrance and cul-de sac of existing; new structure farther downstream than existing US 17 bridge
	B, Q, T, M Avoidance, N Avoidance	No Effect	No physical impacts; no access changes; no change of use or physical features of a property's setting; visual, atmospheric, or audible intrusions
Wilmington Historic District (NR) Criteria A & C	V Arterial	Adverse Effect 4(f) Use	Approximately 3.28 acres of ROW impacts to district and contributing structures will be removed or affected. Impacts to the South Front Street Apartments (contributing) could be minimized with design changes at the intersection of Greenfield and Front streets
	B, Q, T, M Avoidance, N Avoidance	No Effect	No physical impacts; no changes to historical road patterns; no change of use or physical features of a property's setting; visual, atmospheric, or audible intrusions
Southern and Northwest Sections of Lake Forest Defense Housing (DE) Criteria A & C	V Arterial	No Adverse Effect	Minor visual impacts and roadway improvements stop at edge of district. No physical impacts; no changes to historical road patterns; no change of use or physical features of a property's setting; atmospheric, or audible intrusions
	B, Q, T, M Avoidance, N Avoidance	No Effect	No physical impacts; no changes to historical road patterns; no change of use or physical features of a property's setting; visual, atmospheric, or audible intrusions
Sunset Park Historic District (NR) Criteria A & C	V Arterial	Adverse Effect 4(f) Use	ROW and easement impacts to approximately 4-5 houses within district that may require demolition of the buildings. Avoid impacts to pergolas and signage @ entrance to district – implement conceptual design which maintains existing curb and gutter on west side of US 421 (Carolina Beach Road) so as to ensure that proposed sidewalk would maintain existing offset (or less) to avoid impacts to neighborhood
	B, Q, T, M Avoidance, N Avoidance	No Effect	No physical impacts; no changes to access; no change of use or physical features of property's setting; visual, atmospheric, or audible intrusions

Sunset Park School (DE) Criterion C	V Arterial	No Adverse Effect w/ commitments <i>De minimis</i> under 4(f)	ROW and easement impacts to the parking lot and landscaping, but no impacts to the structure. NCDOT will close the driveway along US 421, but rear access to parking lot will remain. NCDOT will install landscaping along US 421 in coordination with property owner and HPO. During construction, NCDOT will erect protective plastic fencing around the pine trees that flank the school's entrance
	B, Q, T, M Avoidance, N Avoidance	No Effect	No physical impacts; no changes to access; no change of use or physical features of property's setting; visual, atmospheric, or audible intrusions
Jacob and Sarah Horowitz House (DE) Criterion C	V Arterial	Adverse Effect 4(f) Use	ROW and easement impacts would require demolition of the building
	B, Q, T, M Avoidance, N Avoidance	No Effect	No physical impacts; no changes to historical road patterns; no change of use or physical features of a property's setting; visual, atmospheric, or audible intrusions
Hanover Heights Historic District (DE) Criteria A & C	V Arterial	No Effect	No physical impacts; no contributing structures impacted; no change of use or physical features of a property's setting; visual, atmospheric, or audible intrusions
	B, T, N Avoidance	No Adverse Effect w/ commitments <i>De minimis</i> under 4(f)	Less than 0.01 acre of ROW impacts, with 0.03 acre of easement needed. NCDOT will replant the large plantings in front of the Cape Fear Presbyterian Church along Shipyard Boulevard if impacted during construction
	Q, M Avoidance	No Effect	No physical impacts; no changes to historical road patterns; no change of use or physical features of a property's setting; visual, atmospheric, or audible intrusions
Wilmington National Guard Armory (DE) Criteria A & C	V Arterial	No Adverse Effect w/ commitments <i>De minimis</i> under 4(f)	No impacts to building or access, but 0.07 acre of ROW required; no change of use or physical features of a property's setting; visual, atmospheric, or audible intrusion. If necessary, NCDOT will relocate the flag pole and provide a sign perpendicular to US 421 with a font similar to that displayed on the building

	B, Q, T, M Avoidance, N Avoidance	No Effect	No physical impacts; no changes to historical road patterns; no change of use or physical features of a property's setting; visual, atmospheric, or audible intrusions
DH Lippitt House/Clarendon House (DE) Criteria C & D	All alternatives	No Effect	No physical impacts; no changes to historical road patterns; no change of use or physical features of a property's setting; visual, atmospheric, or audible intrusions
Goodman House & Doctor's Office (DE) Criterion C	All alternatives	No Effect	No physical impacts; no changes to historical road patterns; no change of use or physical features of a property's setting; visual, atmospheric, or audible intrusions

Initialed: NCDOT MPJ FHWA Wdy HPO RSC

FHWA Intends to use the HPO's concurrence as a basis for a "de minimis" finding for the following properties, pursuant to Section 4(f):
 Sunset Park School-V Arterial
 Hanover Heights Historic District - Alternatives B, T, and N Avoidance
 Wilmington National Guard Armory -V Arterial

Appendix A3: Correspondence from Local Agencies

Correspondence from Local Agencies

Date	From	To	General Subject
05/08/2006	URS Corporation	New Hanover County Department of Aging	Public involvement coordination
05/08/2006	URS Corporation	Brunswick County Department of Social Services	Public involvement coordination
05/08/2006	URS Corporation	City of Wilmington Department of Community Development	Public involvement coordination
05/10/2006	URS Corporation	City of Wilmington, Development Services	Open space information for the City of Wilmington
05/12/2006	URS Corporation	City of Wilmington, Development Services	Open space information for the City of Wilmington
05/12/2006, 05/15/2006	URS Corporation	City of Wilmington, Parks Rec and Downtown	Open space information for the City of Wilmington
05/18/2006	URS Corporation	New Hanover County, Parks Department	Open space information for New Hanover County
05/18/2006	URS Corporation	Town of Navassa	Community impacts of the Cape Fear Skyway project
06/04/2008	URS Corporation	Wilmington/Cape Fear Coast Convention & Visitors Bureau	Cape Fear Skyway Bridge Study
06/08/2006	URS Corporation	New Hanover County Emergency Management	Community impacts of the Cape Fear Skyway project
06/08/2006	URS Corporation	New Hanover County Environmental Management	Community impacts of the Cape Fear Skyway project
06/09/2006	URS Corporation	Brunswick County, Emergency Services	Community impacts of the Cape Fear Skyway project
06/09/2006	URS Corporation	Brunswick County, Parks and Recreation	Community impacts of the Cape Fear Skyway project
06/09/2006	URS Corporation	Brunswick Interagency Transit System (BITS)	Services provided
06/12/2006	URS Corporation	Brunswick County	Questions about the CIA
06/13/2006	URS Corporation	New Hanover County	Community impacts of the Cape Fear Skyway project

Correspondence from Local Agencies

Date	From	To	General Subject
06/13/2006	URS Corporation	WAVE (Cape Fear Public Transportation Authority)	Community impacts of the Cape Fear Skyway project
06/13/2006	URS Corporation	New Hanover County	Community impacts of the Cape Fear Skyway project
06/13/2006	URS Corporation	Greater Wilmington Chamber of Commerce	Community impacts of the Cape Fear Skyway project
06/14/2006	URS Corporation	Brunswick County Register of Deeds	Date of recordation of plat for Snee Farm, Stoney Creek, Planters Walk
06/19/2006	URS Corporation	Brunswick County	GIS data request for CIA
07/18/2006	North Carolina Turnpike Authority	Land Protection	Request for info and GIS data
08/22/2006	Wilmington Urban Area Metropolitan Planning Organization Transportation Advisory Committee	North Carolina Turnpike Authority	Wilmington Bypass & Cape Fear Skyway and Speed Limit
06/04/2008	Cape Fear Coast Convention & Visitors Bureau	URS Corporation	Wilmington's interest in the cruise line industry
12/08/2008	Wilmington MPO	URS Corporation	Cape Fear Skyway Purpose & Need question
12/15/2008	URS Corporation	Wilmington MPO	Cape Fear Skyway Purpose & Need question
01/14/2009	Wilmington MPO	URS Corporation	Cape Fear Skyway question about Flossie Bryant Tract
02/02/2009	North Carolina Turnpike Authority	Wilmington Urban Area MPO	CAD files request
02/11/2009	URS Corporation	Cape Fear council of Governments	Cape Fear Skyway 2/18/9 Presentation
02/25/2009	Wilmington MPO	URS Corporation	Cape Fear Skyway Purpose & Need question – safety issues
03/09/2009	Wilmington MPO	URS Corporation	Development proposal for the River Lights development on River Road
04/28/2009	Wilmington MPO	URS Corporation	1999-2025 Transportation Plan
08/12/2009	URS Corporation	URS Corporation	Draft purpose and need statement for the Cape Fear Skyway project
08/20/2009	Wilmington MPO	URS Corporation	Commercial growth in study area

Correspondence from Local Agencies

Date	From	To	General Subject
10/02/2009	Wilmington MPO	URS Corporation	Commercial vehicle summary
10/02/2009	Wilmington MPO	URS Corporation	Northeast Brunswick County
12/09/2010	Wilmington Urban Area MPO	North Carolina Turnpike Authority	Pedestrian and bicycle facilities in the design of the Cape Fear Skyway Bridge
03/28/2013	Town of Leland	NCDOT, WMPO, and NCTA	Memo to WMPO requesting addition to April agenda of resolutions
04/03/2015	URS Corporation	Town of Leland – Public Utilities Director	Changes in water and sewer service for the Town of Leland
04/07/2015	URS Corporation	Belville Town Administrator	Development plans within Belville
04/09/2015	URS Corporation	Brunswick County Planning	Development plans in the project study area
05/17/2013	Cape Fear Public Utility Authority	URS Corporation	Request for Utility Location Data for Cape Fear Crossing Project
05/20/2013	Cape Fear Public Utility Authority	URS Corporation	Request for Utility Location Data for Cape Fear Crossing Project
05/20/2013	Town of Leland	Town of Leland	Cape Fear Crossing question – water and sewer service
05/23/2013	Wilmington MPO	Town of Leland	Meeting comments
07/10/2013	URS Corporation	Wilmington MPO	Proposed Town of Leland Alignment
07/17/2013	URS Corporation	NCDOT Wilmington MPO	Duke Energy Progress coordination
04/03/2015	URS Corporation	Town of Leland	Changes in the water and sewer service for the Town of Leland
04/07/2015	URS Corporation	Town of Belville	Town development status
04/09/2015	URS Corporation	Town of Belville	Development plans in the project study area
04/20/2017	Wilmington MPO	Board of Members, Wilmington MPO	Concerns about the Cape Fear Crossing Study
05/31/2017	Wilmington MPO	NCDOT	WMPO resolution with MA and NA as preferred alternative
07/06/2017	AECOM	Wilmington MPO	GIS data request
07/06/2017	AECOM	NCDOT	TCC Meeting: Finalized rail realignment feasibility study
07/14/2017	AECOM	Wilmington MPO	Cape Fear Crossing alternatives

31825110

May 8, 2006

Ms. Annette Crumpton, Director
New Hanover County Department of Aging
2222 South College Road
Wilmington, North Carolina 28403

Re: Cape Fear Skyway Project, TIP Number U-4738
Brunswick and New Hanover Counties

Dear Ms. Crumpton:

URS Corporation has been selected to perform the planning and environmental studies for the proposed Cape Fear Skyway project which is a North Carolina Turnpike Authority (NCTA) candidate toll road project. As proposed, the project would be an approximate 9.5-mile, 4-lane, median divided roadway with a high-level bridge structure over the Cape Fear River.

Public involvement is an important part of the decision-making process for transportation projects in North Carolina. An important consideration during public involvement is identifying any traditionally under-served populations that may require unique methods of general communication, exchange of information, and/or comment solicitation. These populations could include:

- Minorities
- Low-income citizens
- Non drivers (transit dependent)
- Citizens with limited English proficiency
- Children
- Elderly
- Physically disabled (visually, hearing, mobility) citizens
- Learning impaired citizens including non-readers

As part of the identification process for tailoring the public involvement program to the uniqueness of the area, we are asking for; 1) local input on any known populations of the citizen groups listed above and, 2) if there are transportation services made available to these populations that should be considered during the study process for the proposed project.

Ms. Annette Crumpton
May 8, 2006
Page 2

A map depicting the range of the study area is included for your convenience. Please contact me or Ms. Shannon Cox at 800-816-7817 (toll-free) if you have any questions about this request or any general comments.

Thank you for your time regarding this request.

Sincerely,

URS Corporation – North Carolina

Kimberly S. Leight, AICP
Senior Environmental Planner

KSL:bkc

Enclosure

xc: Tracy Roberts, HNTB

31825110

May 8, 2006

Mr. Jim Russell, Director
Brunswick Senior Resources, Inc.
PO Box 89
Bolivia, North Carolina 28422

Re: Cape Fear Skyway Project, TIP Number U-4738
Brunswick and New Hanover Counties

Dear Mr. Russell:

URS Corporation has been selected to perform the planning and environmental studies for the proposed Cape Fear Skyway project which is a North Carolina Turnpike Authority (NCTA) candidate toll road project. As proposed, the project would be an approximate 9.5-mile, 4-lane, median divided roadway with a high-level bridge structure over the Cape Fear River.

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Mr. Jim Russell
May 8, 2006
Page 2

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Thank you for your time regarding this request.

Sincerely,

URS Corporation – North Carolina

Kimberly S. Leight, AICP
Senior Environmental Planner

KSL:bkc

Enclosure

xc: Tracy Roberts, HNTB

31825110

May 8, 2006

Dr. Chris Wellford, Director
Southeastern Center for MH/DD/SAS
P.O. Box 246
Bolivia, North Carolina 28422

Re: Cape Fear Skyway Project, TIP Number U-4738
Brunswick and New Hanover Counties

Dear Dr. Wellford:

URS Corporation has been selected to perform the planning and environmental studies for the proposed Cape Fear Skyway project which is a North Carolina Turnpike Authority (NCTA) candidate toll road project. As proposed, the project would be an approximate 9.5-mile, 4-lane, median divided roadway with a high-level bridge structure over the Cape Fear River.

Public involvement is an important part of the decision-making process for transportation projects in North Carolina. An important consideration during public involvement is identifying any traditionally under-served populations that may require unique methods of general communication, exchange of information, and/or comment solicitation. These populations could include:

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- Children
- Elderly
- Physically disabled (visually, hearing, mobility) citizens
- Learning impaired citizens including non-readers

As part of the identification process for tailoring the public involvement program to the uniqueness of the area, we are asking for; 1) local input on any known populations of the citizen groups listed above and, 2) if there are transportation services made available to these populations that should be considered during the study process for the proposed project.

Dr. Chris Wellford
May 8, 2006
Page 2

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Thank you for your time regarding this request.

Sincerely,

URS Corporation – North Carolina

Kimberly S. Leight, AICP
Senior Environmental Planner

KSL:bkc

Enclosure

xc: Tracy Roberts, HNTB

31825110

May 8, 2006

Ms. Lillie Gray, Manager
City of Wilmington Department of Community Development
305 Chestnut Street
2nd Floor Tower
Wilmington, North Carolina 28401

Re: Cape Fear Skyway Project, TIP Number U-4738
Brunswick and New Hanover Counties

Dear Ms. Gray:

URS Corporation has been selected to perform the planning and environmental studies for the proposed Cape Fear Skyway project which is a North Carolina Turnpike Authority (NCTA) candidate toll road project. As proposed, the project would be an approximate 9.5-mile, 4-lane, median divided roadway with a high-level bridge structure over the Cape Fear River.

Public involvement is an important part of the decision-making process for transportation projects in North Carolina. An important consideration during public involvement is identifying any traditionally under-served populations that may require unique methods of general communication, exchange of information, and/or comment solicitation. These populations could include:

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- Low-income citizens
- Non drivers (transit dependent)
- Citizens with limited English proficiency
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- Elderly
- Physically disabled (visually, hearing, mobility) citizens
- Learning impaired citizens including non-readers

As part of the identification process for tailoring the public involvement program to the uniqueness of the area, we are asking for; 1) local input on any known populations of the citizen groups listed above and, 2) if there are transportation services made available to these populations that should be considered during the study process for the proposed project.

Ms. Lillie Gray
May 8, 2006
Page 2

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Thank you for your time regarding this request.

Sincerely,

URS Corporation – North Carolina

Kimberly S. Leight, AICP
Senior Environmental Planner

KSL:bkc

Enclosure

xc: Tracy Roberts, HNTB

31825110

May 8, 2006

Mr. Jamie Orrock, Director
Brunswick County Department of Social Services
P.O. Box 219
Bolivia, North Carolina 28422

Re: Cape Fear Skyway Project, TIP Number U-4738
Brunswick and New Hanover Counties

Dear Mr. Orrock:

URS Corporation has been selected to perform the planning and environmental studies for the proposed Cape Fear Skyway project which is a North Carolina Turnpike Authority (NCTA) candidate toll road project. As proposed, the project would be an approximate 9.5-mile, 4-lane, median divided roadway with a high-level bridge structure over the Cape Fear River.

Public involvement is an important part of the decision-making process for transportation projects in North Carolina. An important consideration during public involvement is identifying any traditionally under-served populations that may require unique methods of general communication, exchange of information, and/or comment solicitation. These populations could include:

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- Low-income citizens
- Non drivers (transit dependent)
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- Children
- Elderly
- Physically disabled (visually, hearing, mobility) citizens
- Learning impaired citizens including non-readers

As part of the identification process for tailoring the public involvement program to the uniqueness of the area, we are asking for; 1) local input on any known populations of the citizen groups listed above and, 2) if there are transportation services made available to these populations that should be considered during the study process for the proposed project.

Mr. Jamie Orrock
May 8, 2006
Page 2

A map depicting the range of the study area is included for your convenience. Please contact me or Ms. Shannon Cox at 800-816-7817 (toll-free) if you have any questions about this request or any general comments.

Thank you for your time regarding this request.

Sincerely,

URS Corporation – North Carolina

Kimberly S. Leight, AICP
Senior Environmental Planner

KSL:bkc

Enclosure

xc: Tracy Roberts, HNTB



1600 Perimeter Park Drive
Morrisville, North Carolina 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1235

RECORD OF TELEPHONE CONVERSATION

DATE: 05/10/06	PROJECT NO.
RECORDED BY: Shannon Cox	OWNER/CLIENT: NCTA – Cape Fear Skyway
TALKED WITH: Chad Ives, GIS Planner	FROM: City of Wilmington, Development Services
CONTACT INFORMATION: City of Wilmington, Development Services 305 Chestnut St Wilmington NC 28402 voice: 910.341.4643 fax: 910.341.7801 email: chad.ives@wilmingtonnc.gov	
NATURE OF CALL (INCOMING OR OUTGOING) Out	
MAIN SUBJECT OF CONVERSATION: Open space information for the City of Wilmington	

I requested information from Mr. Ives regarding both existing and planned areas of open space/greenspace/parks in the City of Wilmington. Mr. Ives indicated that he would mail a CD with GIS data for land uses by parcel. He also indicated that the city does not have an open space plan but that I should talk to Phil Prete who is working on a plan and may have an idea of what areas are planned for parks, etc.

(Name and Title)



1600 Perimeter Park Drive
Morrisville, North Carolina 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1235

RECORD OF TELEPHONE CONVERSATION

DATE: 05/12/06	PROJECT NO.
RECORDED BY: Shannon Cox	OWNER/CLIENT: NCTA – Cape Fear Skyway
TALKED WITH: Phil Prete, Environmental Planner	FROM: City of Wilmington, Development Services
CONTACT INFORMATION: 910-798-7444	
NATURE OF CALL (INCOMING OR OUTGOING) Out	
MAIN SUBJECT OF CONVERSATION: Open space information for the City of Wilmington	

I asked Mr. Prete whether he had any information pertaining to planned open space/green space/parks. He indicated that he is in the process of working on a natural areas plan but that it will not be completed until the end of the year and he does not have information to give me at this time.

Mr. Prete indicated that if I sent him a shapefile of our study area he could prioritize looking into that area. He would look at all vacant parcels in the study area and determine if they meet the criteria for natural areas. Mr. Prete also indicated that I should contact Gary Shell with the Parks Division to see what parcels are currently slated for acquisition/development for parks.

Mr. Prete asked to be added to the mailing list for the project.

I added Mr. Prete to the mailing list and sent him a shape file of the study area on 5/12/06.

(Name and Title)



1600 Perimeter Park Drive
Morrisville, North Carolina 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1235

RECORD OF TELEPHONE CONVERSATION

DATE: 05/12/06, 05/15/06	PROJECT NO.
RECORDED BY: Shannon Cox	OWNER/CLIENT: NCTA – Cape Fear Skyway
TALKED WITH: Gary Shell, Deputy Director	FROM: City of Wilmington, Parks Rec and Downtown
CONTACT INFORMATION: 910-345-7855 Parks, Recreation & Downtown Services Dept. of Community Services City of Wilmington 302 Willard Street Wilmington, NC 28401 Gary.Shell@wilmingtonnc.gov	
NATURE OF CALL (INCOMING OR OUTGOING) Out	
MAIN SUBJECT OF CONVERSATION: Open space information for the City of Wilmington	

5/12/06

I left a message for Mr. Shell requesting information on parcels in Wilmington that are slated for acquisition and/or development for parks/open space.

5/15/06

Mr. Shell returned my call. He indicated that there are three properties in the vicinity of the project that were recently acquired/ are being looked at for parks and open space.

- (1) On the southeast side of the intersection of Sunnyvale Road and Bryan Road. The City of Wilmington is in the process of talking to the property owner to acquire this land. It is a 42 acre area, 30 of which would be used for baseball/softball fields. If the city needs to stay away from this property because of the Cape Fear Skyway they need to know ASAP.
- (2) The City of Wilmington is looking at a piece of property just north of the intersection of River Road and Sunnyvale Road. It is a 30 acre undeveloped tract. It is only under consideration at this point.
- (3) Last week New Hanover County was willed a large tract (45-50 acres) of land west of Independence Boulevard near the proposed alignment of the Cape Fear Skyway. The contact person to find out more about this property is Neil Lewis (910-798-7198).

Mr. Shell indicated that a bond referendum was passed two weeks ago and the city is in an acquisition stage. He indicated that if I send him the study area for the project he could keep me informed of any updates on the two properties mentioned and future properties the city considers for open space.

Mr. Shell requested that he be notified as soon as possible if the city should not consider the property at Sunnvale Road and Bryan Road because of the project. This feedback would be very helpful to them.

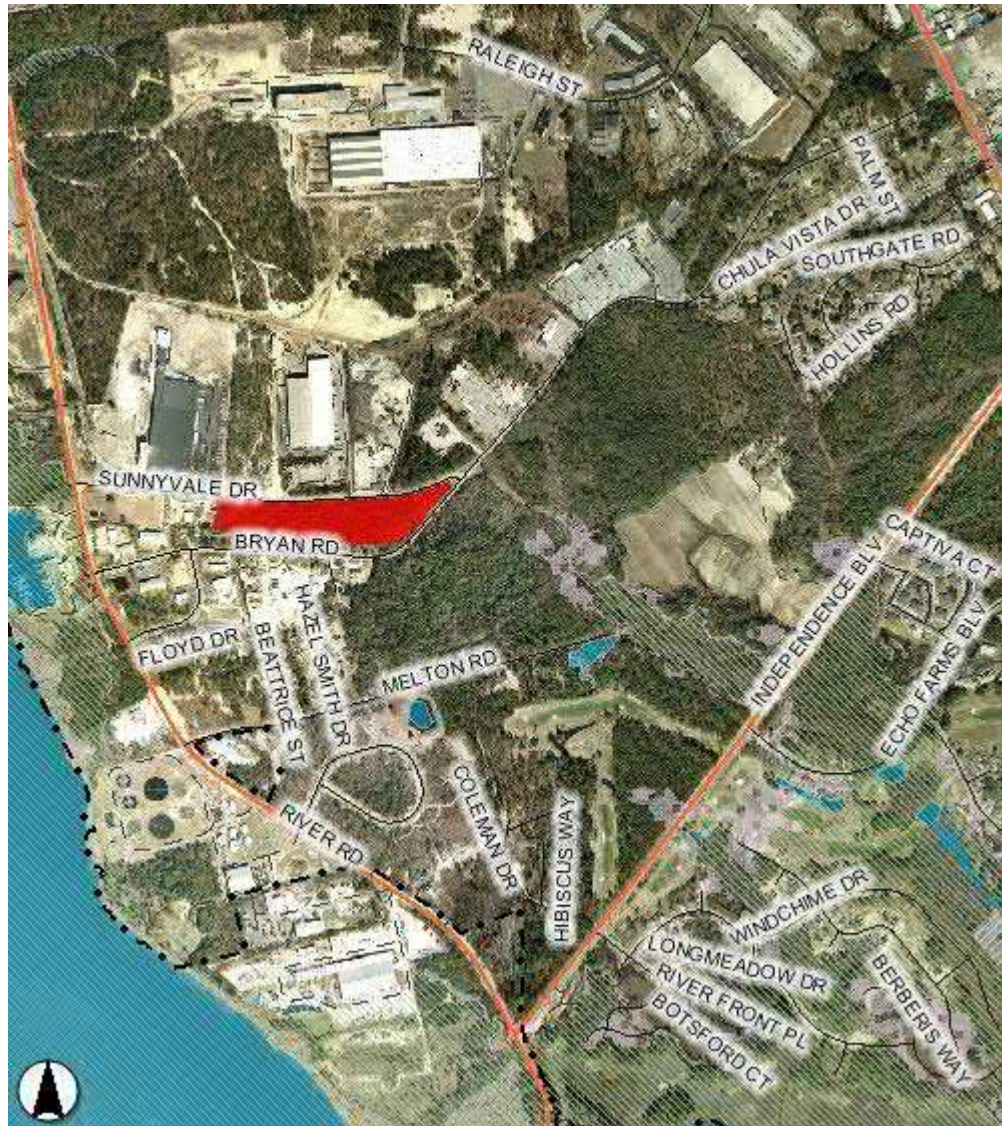
Mr. Shell will send data that can be used with GIS indicating the parcels we discussed.

(Name and Title)

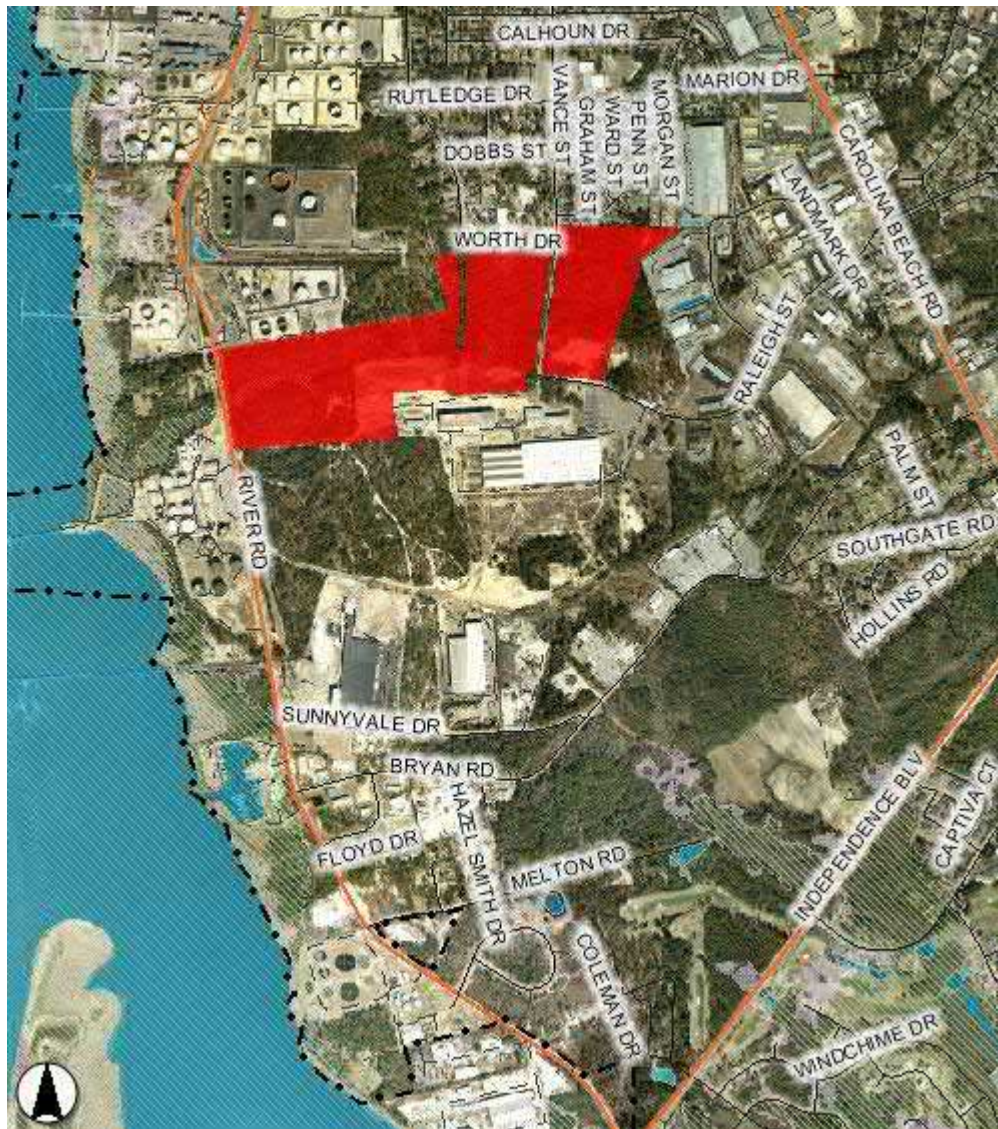


1600 Perimeter Park Drive
Morrisville, North Carolina 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1235

Note: The 4/10-11 workshop map showing the study area was sent to Mr. Shell following the conversation.



(Name and Title)





1600 Perimeter Park Drive
Morrisville, North Carolina 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1235

RECORD OF TELEPHONE CONVERSATION

DATE: 05/18/06	PROJECT NO.
RECORDED BY: Shannon Cox	OWNER/CLIENT: NCTA – Cape Fear Skyway
TALKED WITH: Neal Lewis, Director	FROM: New Hanover County, Parks Department
CONTACT INFORMATION: 910-798-7198 230 Market Place Drive, Suite 120 Wilmington, NC 28403 nlewis@nhcgov.com	
NATURE OF CALL (INCOMING OR OUTGOING) In (Returned outgoing call)	
MAIN SUBJECT OF CONVERSATION: Open space information for New Hanover County	

I called Mr. Lewis to inquire about the property described by Mr. Shell at Independence Boulevard near where the Skyway is proposed to intersect. Mr. Lewis indicated that the property is called Bryan Farm. It is about 60 acres and was awarded to New Hanover County from the will of Ms. Flossie Bryan. Due to restrictions on the property (from the will) it can only be used for urban gardens. The homestead on the property must be preserved and the sister of Ms. Flossie Bryan has a lifetime right to live on the property. New Hanover County has some preliminary plans to enhance garden opportunities for individual urban gardens.

By request, Mr. Lewis indicated that he received a map from an NCDOT engineer showing the potential ROW of the Skyway. The map shows that part of the subject property could be sliced by the Skyway. Mr. Lewis is very concerned and wants the property to remain a contiguous 60 acres. He wonders if there is a way the Skyway could be curved to avoid the property. He has had no other contacts with anyone about the property.

Mr. Lewis sent a map of the property via email but I was unable to open it. I requested he send alternative files on 5/18/06.

Mr. Lewis also indicated that South of the intersection of Independence Boulevard and River Road there is a plan for a major new development. The development would span both sides of River Road. As part of the development there are plans for land to be given to the county for a county park. The project has been in the works since 1999. Mr. Lewis is unable to release any additional information due to contract obligations. He suggested talking with Chris O'Keefe in the planning department as he may be able to provide additional information (910-798-7444)

Mr. Lewis indicated that the NC Coastal Land Trust is interested in property for open space at the foot of Independence Boulevard and River Road near Barnard's Creek. A Dry Stock marina is planned at Barnard's Creek and the open space would be part of the mitigation plan. Mr. Lewis suggested calling Camilla Herlevich, Executive Director, Coastal Land Trust (910-790-4524, Camilla@coastallandtrust.org). He indicated that she is also a good source for information about open space in general.

There were no other properties in the area that were of concern at this time. Mr. Lewis indicated that the best way to stay informed about future plans is to stay in contact with him.

(Name and Title)



1600 Perimeter Park Drive
Morrisville, North Carolina 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1235

RECORD OF TELEPHONE CONVERSATION

DATE: 06/09/06	PROJECT NO.
RECORDED BY: Shannon Cox	OWNER/CLIENT: NCTA – Cape Fear Skyway
TALKED WITH: George Page, Director	FROM: Brunswick County, Parks and Recreation
CONTACT INFORMATION: 910-253-2670 PO Box 249 Bolivia, NC 28422 gpage@brunsco.net	
NATURE OF CALL (INCOMING OR OUTGOING) Out	
MAIN SUBJECT OF CONVERSATION: Impacts on community associated with the project.	

I called Mr. Page to discuss potential community impacts associated with the project. He indicated that he sees the need for more open meetings in the Leland area but would rather we work with Leslie Bell, the planning director for Brunswick County and then Mr. Bell could work with him.

(Name and Title)



1600 Perimeter Park Drive
Morrisville, North Carolina 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1235

RECORD OF TELEPHONE CONVERSATION

DATE: 06/08/06	PROJECT NO.
RECORDED BY: Shannon Cox	OWNER/CLIENT: NCTA – Cape Fear Skyway
TALKED WITH: Warren Lee, Director	FROM: New Hanover County Emergency Management
CONTACT INFORMATION: 910-798-6900 ext. 3 wlee@nhcgov.com	
NATURE OF CALL (INCOMING OR OUTGOING) Out	
MAIN SUBJECT OF CONVERSATION: Community impacts of the Cape Fear Skyway.	

I called Mr. Lee to discuss potential impacts of the Cape Fear Skyway on the community for purposes of the Community Impact Assessment (CIA). Mr. Lee indicated that, at this point, he is unsure what to expect in terms of traffic on the bridge. Mr. Lee indicated that he has always had some concerns with the lifting of Memorial Bridge and its impact on emergency activities and was interested in the fixed-span aspect of the Cape Fear Skyway. The New Hanover County EMS and fire departments have some mutual aid projects with Brunswick County and also transport people across counties to hospitals. The lift-span aspect of Memorial Bridge causes some concerns for these activities. The Cape Fear Skyway could also impact evacuation, but Mr. Lee is unsure of the exact impact at this point.

(Name and Title)



1600 Perimeter Park Drive
Morrisville, North Carolina 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1235

RECORD OF TELEPHONE CONVERSATION

DATE: 06/08/06	PROJECT NO.
RECORDED BY: Shannon Cox	OWNER/CLIENT: NCTA – Cape Fear Skyway
TALKED WITH: Raymond L. Church, Jr., Department Director	FROM: New Hanover County Environmental Management
CONTACT INFORMATION: 910-798-4400	
NATURE OF CALL (INCOMING OR OUTGOING) Out	
MAIN SUBJECT OF CONVERSATION: Community impacts of the Cape Fear Skyway.	

I called Mr. Church to discuss potential impacts of the Cape Fear Skyway on the community for purposes of the Community Impact Assessment (CIA). Mr. Church indicated that, while he thought the project would be great for the community in that it would help alleviate traffic on the two existing bridges and keep trucks closer to the port, it probably would not affect their department. Mr. Church indicated that there is a recycling center in the southern part of the county at Monkey Junction and Carolina Beach Road, but he did not expect that it would be greatly affected by the project.

(Name and Title)



1600 Perimeter Park Drive
Morrisville, North Carolina 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1235

RECORD OF TELEPHONE CONVERSATION

DATE: 06/09/06	PROJECT NO.
RECORDED BY: Shannon Cox	OWNER/CLIENT: NCTA – Cape Fear Skyway
TALKED WITH: Randy Thompson, Director	FROM: Brunswick County, Emergency Services
CONTACT INFORMATION: 910-253-5383 PO Box 9 Bolivia, NC 28422 rthompson@brunscos.net	
NATURE OF CALL (INCOMING OR OUTGOING) In (Returned call from 6/08)	
MAIN SUBJECT OF CONVERSATION: Impacts on community associated with the project.	

I called Mr. Thompson to discuss potential community impacts associated with the project. He indicated that he thinks anything that can be done to improve traffic congestion for evacuation purposes will be beneficial to Brunswick County. His only concern about the project is that, during the construction phase, as many routes should be kept open as possible for evacuation needs. Primarily he would be concerned about NC 133 and NC 87 and eventually US 17 once the project reaches that point. Overall, however, he thinks the project and associated benefits will be well worth the short-term inconvenience.

When asked whether the project might facilitate access between New Hanover and Brunswick counties for shared emergency services, Mr. Thompson agreed that this would be an additional benefit of the project.

(Name and Title)

Shannon Cox/Morrisville/URSCorp

06/12/2006 07:30 AM To

lbell@brunsko.net

cc

jeff_weisner@urscorp.com, David Griffin/Morrisville/URSCorp@URSCORP

bcc

Subject

Cape Fear Skyway - Community Impact Assessment

Leslie,

As we discussed over the phone on Friday, we are conducting the Community Impact Assessment (CIA) for the Cape Fear Skyway project on behalf of the North Carolina Turnpike Authority. This is a living document that will be updated with input from the community through public meetings and comments throughout the project development process

Some general questions we ask of local agencies as part of this assessment are: (1) Are there aspects of the existing transportation network that affect your community? (2) What positive or negative effects do you think the Cape Fear Skyway might have on your community, and (3) Are you generally supportive of the project?

More specifically, some of the types of community impacts we address in the document include: aesthetics, compatibility with current land use and land use plans, mobility and access (including access to community activity centers like parks and schools), safety, provision of public services, and economic impacts. We also look at neighborhoods in the vicinity of the project to assess whether the project might have a physical or psychological impact on the community (such as through the creation of a barrier).

Any input you have at this time would be appreciated. We also hope you will be willing to work with us in the future as this project develops.

As I mentioned, it would also be very helpful if you could send the GIS file for neighborhoods and communities and any GIS data you might have for newer developments in the unincorporated areas of Brunswick County. I've attached the study area for the CIA - keep in mind that this is much broader than the preliminary study area being used for preliminary engineering and natural resource-type studies. This is because we expect that community impacts may reach further than the project corridor.

Thanks for your help!

Shannon Cox

Shannon Cox
URS Corporation - North Carolina
1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
(919) 461-1430 Direct
(919) 461-1415 Fax

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Facsimile: (919) 461-1235

RECORD OF TELEPHONE CONVERSATION

DATE: 05/18/06	PROJECT NO.
RECORDED BY: Shannon Cox	OWNER/CLIENT: NCTA – Cape Fear Skyway
TALKED WITH: Eulis Willis, Mayor	FROM: Navassa
CONTACT INFORMATION: 910-371-2432 334 Main Street Navassa, NC 28451 mayor@townofnavassa.org	
NATURE OF CALL (INCOMING OR OUTGOING) Out	
MAIN SUBJECT OF CONVERSATION: Community impacts of the Cape Fear Skyway project.	

I called Mayor Willis to discuss any potential community impacts of the Cape Fear Skyway project. Mr. Willis indicated that he sees the project as a good thing, and that he can't see anything but a positive impact from the project. Specifically, in combination with the Wilmington Bypass, coming through his community, the project will relieve traffic congestion both around and through Wilmington. This will be a positive impact for the existing community and will make the area more attractive. Mayor Willis indicated that anything that could be done to get the project built faster would be helpful.

(Name and Title)



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Morrisville, North Carolina 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1235

RECORD OF TELEPHONE CONVERSATION

DATE: 06/13/06	PROJECT NO.
RECORDED BY: Shannon Cox	OWNER/CLIENT: NCTA – Cape Fear Skyway
TALKED WITH: Bruce Shell, County Manager	FROM: New Hanover County
CONTACT INFORMATION: 910-798-7184 320 Chestnut Street, Room 502 Wilmington, NC 28401 bshell@nhcgov.com	
NATURE OF CALL (INCOMING OR OUTGOING) In (Returned Call)	
MAIN SUBJECT OF CONVERSATION: Community impacts of the Cape Fear Skyway.	

I called Mr. Shell to discuss potential impacts of the Cape Fear Skyway on the community for purposes of the Community Impact Assessment (CIA). Mr. Shell indicated that anything that improves the flow of traffic in the area will make the area more attractive to outsiders and to business and is a real positive for the community. He thought that the project would take some of the traffic load off of downtown Wilmington, also making downtown Wilmington more attractive. The project will also enhance tourism as it will be easier to get to the beaches.

While, overall, Mr. Shell thought that the project would have a positive impact on the community, when asked if he had any concerns about the impact on the existing community, he indicated that his biggest concern is how the project will be paid for. In the past, it has not been the county's responsibility to pay for roads. Some indications that the county will need to step-up to help pay for the road concerns Mr. Shell as it is setting a precedent and it will be very difficult for the county to pay for roads on top of their existing responsibilities, such as schools.

(Name and Title)



1600 Perimeter Park Drive
Morrisville, North Carolina 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1235

RECORD OF TELEPHONE CONVERSATION

DATE: 06/13/06	PROJECT NO.
RECORDED BY: Shannon Cox	OWNER/CLIENT: NCTA – Cape Fear Skyway
TALKED WITH: Chris O'Keefe, Long Range Planner	FROM: New Hanover County
CONTACT INFORMATION: 910-798-7444	
NATURE OF CALL (INCOMING OR OUTGOING) Out	
MAIN SUBJECT OF CONVERSATION: Community impacts of the Cape Fear Skyway.	

I called Mr. O'Keefe to discuss any potential community impacts of the Cape Fear Skyway.

Mr. O'Keefe indicated that, generally, the project is consistent with land use plans as it is proposed to touch down in an urban area (as classified in the 2006 CAMA plan).

Neighborhoods are more applicable to the City of Wilmington than New Hanover County, however, any available GIS data is on the New Hanover County website: Online Services > GIS...

Direct impacts will be more applicable to the City of Wilmington, but Mr. O'Keefe did mention that he met with the Bicycle Advisory Committee. The Parks Department mentioned using part of Independence Boulevard in the bicycle trail system. The impact of the Cape Fear Skyway and potential widening of Independence Boulevard are a concern as to whether bicycle lanes will be included. Independence Boulevard, where the Cape Fear Skyway would come in, is heavily used by bicyclists for recreation and transportation.

Other concerns include the tract of land (Bryan Farm) acquired by the county. I told Mr. O'Keefe that we are in the process of setting up a meeting with Neal Lewis, Director of the Planning Department, to coordinate our efforts with him. Mr. O'Keefe was supportive of that.

Another area, at the large tract of land south of Independence Boulevard where the Cape Fear Skyway would come in is planned for 3,300 residential units, a golf course, and a commercial component with office space.

Positive aspects of the project could include alleviating concerns about evacuation and congestion, especially in the southern portion of the county. However, the project could result in added congestion on some roads. Another comment Mr. O'Keefe has received from the public is the concern of loss of wetlands in Brunswick County.

(Name and Title)



1600 Perimeter Park Drive
Morrisville, North Carolina 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1235

RECORD OF TELEPHONE CONVERSATION

DATE: 06/13/06	PROJECT NO.
RECORDED BY: Shannon Cox	OWNER/CLIENT: NCTA – Cape Fear Skyway
TALKED WITH: Albert Eby, Director	FROM: WAVE (Cape Fear Public Transportation Authority)
CONTACT INFORMATION: 910-202-2035 P.O. Box 2258 Wilmington, NC 28402 aeby@wavetransit.com	
NATURE OF CALL (INCOMING OR OUTGOING) Out	
MAIN SUBJECT OF CONVERSATION: Community impacts of Cape Fear Skyway.	

I called Mr. Eby to discuss potential community impacts of the Cape Fear Skyway project, and, more specifically, to ask about whether the Cape Fear Skyway might be used for public transportation routes. Mr. Eby indicated that the Skyway has not really been considered as a route for public transportation because of its potential to be a toll road. Currently, the Isabelle Holmes and Memorial bridges are used between New Hanover and Brunswick County as public transportation routes. These bridges are useful as the current populations served by public transportation are mainly in Leland and Navassa. The Cape Fear Skyway might be considered as a route for public transportation if development continues in that southern area. At this point, Mr. Eby does not see any community impact from a public transportation perspective.

(Name and Title)



1600 Perimeter Park Drive
Morrisville, North Carolina 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1235

RECORD OF TELEPHONE CONVERSATION

DATE: 06/14/06	PROJECT NO.
RECORDED BY: Shannon Cox	OWNER/CLIENT: NCTA – Cape Fear Skyway
TALKED WITH:	FROM: Brunswick County Register of Deeds
CONTACT INFORMATION: 910-253-2690	
NATURE OF CALL (INCOMING OR OUTGOING) Out	
MAIN SUBJECT OF CONVERSATION: Date of recordation of plat for Snee Farm, Stoney Creek, Planters Walk..	

I called the Register of Deeds to find out the date of the recordation of plat for the three subject subdivisions. The first map was recorded for each development as follows:

Subdivision	Date of First Map	Map Book	Page Number
Snee Farm	8/12/96	Q	386
Stoney Creek	1992	W	150
Planters Walk	5/26/05	32	379

(Name and Title)



1600 Perimeter Park Drive
Morrisville, North Carolina 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1235

RECORD OF TELEPHONE CONVERSATION

DATE: 06/13/06	PROJECT NO.
RECORDED BY: Shannon Cox	OWNER/CLIENT: NCTA – Cape Fear Skyway
TALKED WITH: Tom Cunningham, Governmental Affairs and Infrastructure	FROM: Greater Wilmington Chamber of Commerce
CONTACT INFORMATION: 910-762-2611 ext. 204 One Estell Lee Place Wilmington, NC 28401 cunningham@wilmingtonchamber.org	
NATURE OF CALL (INCOMING OR OUTGOING) Out	
MAIN SUBJECT OF CONVERSATION: Community impacts of Cape Fear Skyway.	

I called Mr. Cunningham to discuss potential community impacts of the Cape Fear Skyway project. He indicated that he thinks the project will have all positive impacts and is definitely needed. The biggest plus will be that it will get truck traffic off of local roads. The fixed bridge is also a benefit – the area currently does not have a bridge that will not open and close. The biggest negative is how the project will be paid for. The project (as all major infrastructure projects) will support existing and bring in new business to the area.

(Name and Title)

Shannon Cox/Morrisville/URSCorp

06/19/2006 02:10 PM To

lbell@brunsko.net

cc

jeff_weisner@urscorp.com, David Griffin/Morrisville/URSCorp@URSCORP

bcc

Subject

Re: Cape Fear Skyway - Community Impact Assessment

Leslie,

I am writing to follow-up on my email request from 6/12 (see below). I understand that my request will take some thought and time, but wondered if you could respond with the GIS data. In addition to the neighborhood and community data previously requested, I was wondering if you also have a layer showing fire stations in Brunswick County.

Thanks for your help.

Take care,
Shannon Cox

Shannon Cox

URS Corporation - North Carolina

1600 Perimeter Park Drive, Suite 400

Morrisville, NC 27560

(919) 461-1430 Direct

(919) 461-1415 Fax

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Shannon Cox/Morrisville/URSCorp

06/12/2006 07:30 AM

To

lbell@brunsko.net

cc

jeff_weisner@urscorp.com, David Griffin/Morrisville/URSCorp@URSCORP

Subject

Cape Fear Skyway - Community Impact Assessment

Leslie,

As we discussed over the phone on Friday, we are conducting the Community Impact Assessment (CIA) for the Cape Fear Skyway project on behalf of the North Carolina Turnpike Authority. This is a living document that will be updated with input from the community through public meetings and comments throughout the project development process

Some general questions we ask of local agencies as part of this assessment are: (1) Are there aspects of the existing transportation network that affect your community? (2) What positive or negative effects do you think the Cape Fear Skyway might have on your community, and (3) Are you generally supportive of the project?

More specifically, some of the types of community impacts we address in the document include: aesthetics, compatibility with current land use and land use plans, mobility and access (including access to community activity centers like parks and schools), safety, provision of public services, and economic impacts. We also look at neighborhoods in the vicinity of the project to assess whether the project might have a physical or psychological impact on the community (such as through the creation of a barrier).

Any input you have at this time would be appreciated. We also hope you will be willing to work with us in the future as this project develops.

As I mentioned, it would also be very helpful if you could send the GIS file for neighborhoods and communities and any GIS data you might have for newer developments in the unincorporated areas of Brunswick County. I've attached the study area for the CIA - keep in mind that this is much broader than the preliminary study area being used for preliminary engineering and natural resource-type studies. This is because we expect that community impacts may reach further than the project corridor.

Thanks for your help!
Shannon Cox

Shannon Cox
URS Corporation - North Carolina
1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
(919) 461-1430 Direct
(919) 461-1415 Fax

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[attachment "Survey Map.jpg" deleted by Shannon Cox/Morrisville/URSCorp]



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Morrisville, North Carolina 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1235

RECORD OF TELEPHONE CONVERSATION

DATE: 06/09/06	PROJECT NO.
RECORDED BY: Shannon Cox	OWNER/CLIENT: NCTA – Cape Fear Skyway
TALKED WITH:	FROM: Brunswick Interagency Transit System (BITS)
CONTACT INFORMATION: 910-754-2764 PO Box 632 Shallotte, NC 28459 bits@nccoast.net	
NATURE OF CALL (INCOMING OR OUTGOING) Out	
MAIN SUBJECT OF CONVERSATION: Services provided.	

I called BITS to ask about the services they provide. BITS is a van service providing transportation throughout Brunswick County with 48 hours notice for a fare of \$1.50 to \$5, depending on the distance of the trip. BITS also has one van that travels to and from New Hanover County for the purpose of medical appointments. 24 hours notice is required for this van service, which runs on Tuesdays and Thursdays for appointments between 9 am and 12pm. According to the contact, BITS would likely use the Cape Fear Skyway for trips to New Hanover County as it would provide closer access to the hospital than the Memorial Bridge.

(Name and Title)



STATE OF NORTH CAROLINA
TURNPIKE AUTHORITY

MICHAEL F. EASLEY
GOVERNOR

1578 MAIL SERVICE CENTER, RALEIGH, N.C. 27699-1578

DAVID W. JOYNER
EXECUTIVE DIRECTOR

July 18, 2006

Ms. Janice Allen
Director of Land Protection
North Carolina Coastal Land Trust
P.O. Box 15451
New Bern, North Carolina 28561

Re: Cape Fear Skyway Project, TIP Number U-4738
Brunswick and New Hanover Counties, NC

Dear Ms. Allen:

The North Carolina Turnpike Authority (NCTA) has begun the planning and environmental studies for the proposed Cape Fear Skyway. The candidate toll road project would be an approximate 9.5-mile, 4-lane, median divided roadway with a high-level bridge structure over the Cape Fear River. A map depicting the study area is included for your reference.

The NCTA Project Team consists of HNTB, who serves as the General Engineering Consultant for the NCTA, and URS Corporation, the consultant under contract with NCTA to conduct planning, environmental and engineering studies for the Cape Fear Skyway.

An important element of developing Cape Fear Skyway study alternatives includes review of existing information and available data pertaining to the human, natural, and physical environments. The purpose of this letter is to request information that will aid in identifying resources within the project study area in order to develop alternative study corridors with consideration given to these resources.

We would like to obtain digital GIS data layers depicting the NCCLT priority area, and NCCLT proposed, priority and protected lands. If you have information pertaining to other protected lands, that would also be useful. The area for which we need this information is depicted on the attached map by the red outlined identified as the project study area.

Please forward this information to:

HNTB North Carolina, P.C.
Attn: Tracy Roberts
343 E. Six Forks Road, Suite 200
Raleigh, NC 27609

Please contact Mr. David Griffin with URS Corporation at 919.461.1446 if you have any questions about this request or any general comments.

Thank you for your time regarding this request.

Sincerely,

North Carolina Turnpike Authority

David Joyner
Executive Director

DWJ:dag

Enclosure

cc: Jennifer Harris, NCTA
Tracy Roberts, HNTB
David Griffin, URS



David
Griffin/Morrisville/URSCorp
08/22/2006 06:35 PM

To jeff_weisner@urscorp.com, peter_trencansky@urscorp.com,
Brenda Crumpler
cc
bcc
Subject Fw: Resolutions- Wilmington Bypass & Cape Fear Skyway
and Speed Limit on NC ...

fyi

brenda - please archive appropriately

thx

d

David A. Griffin, CEP
Vice President

Manager, Environmental Planning & Analysis Group
URS Corporation
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
Office phone: 919/461-1100
Direct: 919/461-1446
Cell: 919/345-9924
Fax: 919/461-1415
e-mail: david_griffin@urscorp.com

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----- Forwarded by David Griffin/Morrisville/URSCorp on 08/22/2006 06:34 PM -----



"Gail Grimes"
<gail.grimes@ncturnpike.org>

08/22/2006 09:56 AM

To "Steve Dewitt" <Steve.Dewitt@ncturnpike.org>, "Jennifer
Harris" <jennifer.harris@ncturnpike.org>, "Anne Redmond"
<ARedmond@HNTB.com>, "Whit Webb"
<webb@HNTB.com>, "David Griffin"
<David_Griffin@urscorp.com>
cc
Subject FW: Resolutions- Wilmington Bypass & Cape Fear Skyway
and Speed Limit on NC ...

Good morning,

The resolutions from Lanny Wilson for your information.

Gail

From: Lanny73763@aol.com [mailto:Lanny73763@aol.com]
Sent: Monday, August 21, 2006 8:04 PM
To: David.Joyner@ncturnpike.org; webbb@hntb.com; gail.grimes@ncturnpike.org
Subject: Fwd: Resolutions- Wilmington Bypass & Cape Fear Skyway and Speed Limit on NC ...

FYI

----- Message from <Mike.Kozlosky@wilmingtonnc.gov> on Wed, 9 Aug 2006 08:27:01 -0400 -----
<Lanny73763@aol.com>, "Bill Sue" <wsue@ec.rr.com> :**To**
Resolutions- Wilmington Bypass & Cape Fear Skyway and Speed Limit on NC 133 :**Subject**

Chairman Wilson and Commissioner Sue,

Attached please find a resolution that I have drafted regarding the US 17 Bypass and Cape Fear Skyway. Additionally please find a resolution that would request NCDOT to reduce the speed limit on NC 133. Please review these resolutions and provide any comments to me by Friday. Thanks.

Mike Kozlosky
Sr. Transportation Planner
City of Wilmington/ Wilmington MPO
(910) 342-2781
<http://www.wmpo.org>



2006-08-16_Resolution_SpeedNC133.doc



Resolution_Wilmington Bypass & Cape Fear Skyway.doc

**WILMINGTON URBAN AREA METROPOLITAN PLANNING ORGANIZATION
TRANSPORTATION ADVISORY COMMITTEE**

**RESOLUTION SUPPORTING A REQUEST TO ANALYZE ALL PRACTICAL ALTERNATIVES TO
MINIMIZE THE IMPACTS TO THE SNEE FARM STONEY CREEK SUBDIVISIONS**

WHEREAS, the Wilmington Bypass and the Cape Fear Skyway are two separate projects that will provide significant benefits to the community and are important to the overall mobility of the region; and

WHEREAS, the Wilmington Bypass and Cape Fear Skyway are identified as Strategic Highway Corridors on Governor Easley and the North Carolina Department of Transportation plan for southeastern North Carolina; and

WHEREAS, the Wilmington Bypass (R-2633) from US 421 to US 17 is funded in the State Transportation Improvement Program for right of way acquisition beginning in fiscal year 2007 and construction beginning in 2009; and

WHEREAS, the Cape Fear Skyway (U-4738) is programmed in the State Transportation Improvement Program for planning and environmental analysis and no funding is programmed for this project; and

WHEREAS, the Cape Fear Skyway is also one of nine potential toll road projects within the state of North Carolina; and

WHEREAS, the Wilmington MPO recognizes that there may be an impact to the human environment for residents living within the Snee Farm and Stoney Creek subdivisions, and

WHEREAS, the Wilmington MPO would encourage the NCDOT and NC Turnpike Authority to consider options that would minimize the impacts to the human environment in the Snee Farm and Stoney Creek communities.

NOW THEREFORE, be it resolved that the Transportation Advisory Committee of the Wilmington Urban Area Metropolitan Planning Organization hereby requests the NCDOT and NC Turnpike Authority explore all practical alternatives to minimize the impacts of the Cape Fear Skyway on the Snee Farm and Stoney Creek subdivisions.

ADOPTED at a regular meeting of the Wilmington Urban Area Metropolitan Planning Organization Transportation Advisory Committee on August 30, 2006.

Lanny Wilson, Chair
Transportation Advisory Committee

Mike Kozlosky, Secretary

**WILMINGTON URBAN AREA METROPOLITAN PLANNING ORGANIZATION
TRANSPORTATION ADVISORY COMMITTEE**

**RESOLUTION SUPPORTING THE REDUCTION OF THE SPEED LIMIT ON NC 133 (RIVER
ROAD) IN BELVILLE, LELAND, AND UNINCORPORATED BRUNSWICK COUNTY, NORTH
CAROLINA**

WHEREAS, the speed limit on NC 133, River Road, is currently posted at 55 miles per hour between US Highway 17-74-76 and Rabon Way Southeast; and

WHEREAS, there are several large-scale residential developments proposed along NC 133 in this area; and

WHEREAS, these developments will increase traffic and congestion along the NC 133 corridor; and

WHEREAS, these developments will also likely increase bicycle and pedestrian traffic along NC 133; and

WHEREAS, a reduction in the posted speed limit from 55 miles per hour to 45 miles per hour will provide for improved for safety and mobility along the NC 133 corridor for the citizens and commuters of Leland, Belville, and Brunswick County.

NOW THEREFORE, be it resolved that the Transportation Advisory Committee of the Wilmington Urban Area Metropolitan Planning Organization does hereby support a reduction of the posted speed limit to from 55 miles per hour to 45 miles per hour between US Highway 17-74-76 and Rabon Way Southeast.

ADOPTED at a regular meeting of the Wilmington Urban Area Metropolitan Planning Organization Transportation Advisory Committee on August 30, 2006.

Lanny Wilson, Chair
Transportation Advisory Committee

Mike Kozlosky, Secretary



1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1415

RECORD OF TELEPHONE CONVERSATION

DATE:06/04/08		PROJECT NO. 31825110	
RECORDED BY: David Griffin		OWNER/CLIENT: NC Turnpike Authority	
TALKED WITH: Kim Hufham – 910/341.4030		FROM: Wilmington/Cape Fear Coast Convention & Visitors Bureau	
NATURE OF CALL (INCOMING OR OUTGOING) Outgoing			
ROUTE TO: Project File	FOR INFORMATION		FOR ACTION
	Joanna Harrington, URS Tracy Roberts, HNTB Jennifer H Harris, NCTA		
MAIN SUBJECT OF CONVERSATION: Cape Fear Skyway Bridge Study			

I called Kim Hufham, President & CEO of the Wilmington Convention and Visitors Bureau, to discuss Wilmington's history with regard to Wilmington's interest in the cruise line industry.

Kim stated that Wilmington is not actively pursuing cruise lines. Based on interest expressed previously, the cruise lines have a number of issues including: channel depth, the vertical clearance of the electrical lines, and distance from the ocean/"open water" to Wilmington.

Kim stated that the City has hosted smaller cruise line vessels of the 100-150 passenger size. These are itinerary-oriented cruises (e.g., a cruise that targets historic towns and cities with guided tours). They are smaller vessels that can pass under Memorial Bridge (vertical clearance about 110') and berth at the City owned dock along Water Street.

Kim added that "...the NC Port at Wilmington is a cargo port, not a cruise line vessel port." However, Kim added that on October 27, 2008, a cruise ship from Germany will be arriving to the area and docking at the NC Port at Wilmington. (In a follow up call from Kim, she advised that the ship was the AidaAura). Kim said this was a 2,000 passenger ship and that there are tours and activities arranged for the passengers. (Wikipedia says the ship can hold 1,300 passengers and 418 crew. Jane's Merchant Ships states that its water draught is 20.34 feet, well within the channel depth limits – 42 feet. No air draught information is available – but Kim advised that they must have investigated the height versus the powerline clearance – about 175 feet - in order to reach the NC Port at Wilmington.)

I told Kim that we had met with the NCSPA and asked her if there were others she would recommend we contact. In a follow-up call, Kim advised that the Water Street dock was owned and operated by the City of Wilmington – the dock master is RT Jones (910-520-6875). She suggested he might offer more information but she wasn't sure.



Mike.Kozlosky@wilmingtonnc.gov

12/08/2008 06:29 PM


To Joanna_Harrington@URSCorp.com

cc

bcc

Subject Re: Cape Fear Skyway Purpose & Need question

History:

 This message has been forwarded.

Joanna,

The Wilmington MPO endorsed a resolution in August 2007 supporting an amendment to the LRTP that identifies the Cape Fear Skyway as a toll facility (attached). The Skyway is a very important project for this region and will provide a significant benefit to the community. The LRTP does not include does not include any problem statements, environmental impacts or alternatives screenings. We are currently evaluating the Transportation model and are working to identify flaws with the current model.

The Purpose and Need outlined several important reasons why this project is important and a vital need for the Wilmington Urban Area. I would encourage you to review that report. Another benefit this project will provide is an additional bridge crossing. The Cape Fear Memorial Bridge handles about 60,000-70,000 cars per day Wilmington is in need of an additional crossing if we are going to be able to handle the growth that is projected for this region.

The City has taken strides to preserve this corridor from encroaching development and funding this project is also a high priority on the City's Legislative Agenda.

If you have any additional questions, I would be glad to lay out why this project is so important to Wilmington and the needs of this community. Please let me know if you require any additional information.

Mike Kozlosky
Executive Director/Sr. Transportation Planner
Wilmington MPO/City of Wilmington
(910) 342-2781

Joanna_Harrington@URSCorp.com

12/05/2008 11:34 AM

To mike.kozlosky@wilmingtonnc.gov

cc David_Griffin@URSCorp.com

Subject Cape Fear Skyway Purpose & Need question

Hi Mike,

We are in the process of revising the Purpose and Need Statement for the Cape Fear Skyway project, and had a few requests for information that may be helpful with the document.

- Are there any products from the LRTP process for the Cape Fear Skyway that may be helpful during the NEPA process? Such as: problem statements, environmental resources, travel demand modeling (traffic forecasting), alternatives screening (any alternatives considered but eliminated?), and public involvement (controversial issues, community context).
- Can you forward the formal toll enforcement legislation that was passed in July 2008?

Please let me know if you need additional information. Thanks in advance for your help!

Joanna

Joanna M. Harrington
Environmental Planner
URS Corporation
1600 Perimeter Park Drive, Suite 400
Morrisville, North Carolina 27560
919.461.1434 (direct)
919.461.1415 (fax)
e-mail: joanna_harrington@urscorp.com

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20081208181942312.pdf

**WILMINGTON URBAN AREA METROPOLITAN PLANNING ORGANIZATION
TRANSPORTATION ADVISORY COMMITTEE**

**RESOLUTION ENDORSING A MODIFICATION TO THE 2030 LONG RANGE
TRANSPORTATION PLAN TO INCLUDE THE CAPE FEAR SKYWAY AS A TOLL FACILITY**

WHEREAS, the Wilmington Urban Area Metropolitan Planning Organization provides transportation planning services for the City of Wilmington, Town of Carolina Beach, Town of Kure Beach, Town of Wrightsville Beach, Town of Belville, Town of Leland, Town of Navassa, New Hanover County, Brunswick County, Pender County, Cape Fear Public Transportation Authority and the NC Board of Transportation; and

WHEREAS, the Wilmington Urban Area Metropolitan Planning Organization is required under Federal legislation to complete the transportation planning process in a Continuous, Comprehensive and Coordinated manner and complete a fiscally constrained Long Range Transportation Plan; and

WHEREAS, the Wilmington Urban Area Metropolitan Planning Organization's Transportation Advisory Committee adopted the current *2030 Long Range Transportation Plan* on March 15, 2005; and

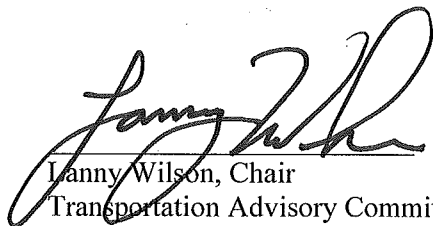
WHEREAS, the *2030 Long Range Transportation Plan* includes the planned construction of the Cape Fear Skyway as a 4-lane median divided controlled access facility that would provide relief on the Cape Fear Memorial Bridge and provide better access to the Port and Southern New Hanover County; and

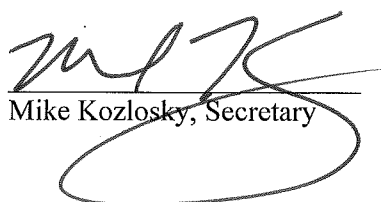
WHEREAS, the 2030 Long Range Transportation Plan relied heavily on the previous Metropolitan Transportation Improvement Program and local Capital Improvement Program to revenue streams and anticipated expenditures; and

WHEREAS, the 2030 Long Range Transportation Plan also indicates that "the Wilmington MPO must look for alternative ways for generating transportation revenues. These innovative sources can come from locally added revenues, statewide efforts, regional efforts and public-private initiatives. It may be possible for the users of a facility to pay fees for specific improvements."

NOW THEREFORE, be it resolved that the Wilmington Urban Area Metropolitan Planning Organization Transportation Advisory Committee hereby endorses a modification to the 2030 Long Range Transportation Plan to implement the Cape Fear Skyway as a toll facility.

ADOPTED at a regular meeting of the Transportation Advisory Committee on August 29, 2007.


Lanny Wilson, Chair
Transportation Advisory Committee


Mike Kozlosky, Secretary



Mike.Kozlosky@wilmingtonnc.gov

12/15/2008 02:38 PM

To David_Griffin@URSCorp.com

cc Joanna_Harrington@URSCorp.com

bcc

Subject Re: Fw: Cape Fear Skyway Purpose & Need question

David,

The Purpose and Need that I reference below was the FS that was completed by NCDOT for the project. The military uses the NC State Port for deployments and shipping of equipment, The construction of this facility will improve access to the State Port for these deployments.

Also, attached please find a resolution from the Wilmington MPO supporting the Cape Fear Skyway. If you have any additional questions please let me know.

Mike Kozlosky
Executive Director/Sr. Transportation Planner
Wilmington MPO/City of Wilmington
(910) 342-2781

David_Griffin@URSCorp.com

12/11/2008 02:51 PM

To Mike.Kozlosky@wilmingtonnc.gov

cc Joanna_Harrington@URSCorp.com

Subject Fw: Cape Fear Skyway Purpose & Need question

Mike -

I saw your response to Joanna below. A few more questions for you.

Your response refers to the Purpose & Need Report. To what report are you referring? If it is the Cape Fear Skyway Draft Purpose and Need Report that we prepared, that is the report in which we are trying to justify certain statements that were made. If you are referring to another report, let us know what that is so we can review.

Something we are trying to justify or cite the source for is a statement being made about the Skyway facilitating military deployment. This statement is made in the 2003 Skway Feasibility Study but references the 1999 Wilmington Urban Area Transportation Plan. Can you provide any more support or additional information about DoD support for the project? Do you have anything in writing or additional documentation to this effect?

Let us know.

Thanks

dag

David A. Griffin, CEP
Vice President

Manager, Environmental Planning & Analysis Group
URS Corporation
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
Office phone: 919/461-1100
Direct: 919/461-1446
Cell: 919/345-9924
Fax: 919/461-1415
e-mail: david_griffin@urscorp.com

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----- Forwarded by David Griffin/Morrisville/URSCorp on 12/11/2008 02:44 PM -----

Joanna Harrington/Morrisville/URSCorp

12/08/2008 08:24 PM

To david_griffin@urscorp.com

cc

Fw: Re: Cape Fear Skyway Purpose & Need question
Subject

Joanna M. Harrington
Environmental Planner
URS Corporation
1600 Perimeter Park Drive, Suite 400
Morrisville, North Carolina 27560
919.461.1434 (direct)
919.461.1415 (fax)
e-mail: joanna_harrington@urscorp.com

-----Forwarded by Joanna Harrington/Morrisville/URSCorp on 12/08/2008 08:23PM -----

To: Joanna_Harrington@URSCorp.com

From: Mike.Kozlosky@wilmingtonnc.gov
Date: 12/08/2008 06:29PM
Subject: Re: Cape Fear Skyway Purpose & Need question

Joanna,

The Wilmington MPO endorsed a resolution in August 2007 supporting an amendment to the LRTP that identifies the Cape Fear Skyway as a toll facility (attached). The Skyway is a very important project for this region and will provide a significant benefit to the community. The LRTP does not include does not include any problem statements, environmental impacts or alternatives screenings. We are currently evaluating the Transportation model and are working to identify flaws with the current model.

The Purpose and Need outlined several important reasons why this project is important and a vital need for the Wilmington Urban Area. I would encourage you to review that report. Another benefit this project will provide is an additional bridge crossing. The Cape Fear Memorial Bridge handles about 60,000-70,000 cars per day Wilmington is in need of an additional crossing if we are going to be able to handle the growth that is projected for this region .

The City has taken strides to preserve this corridor from encroaching development and funding this project is also a high priority on the City's Legislative Agenda.

If you have any additional questions, I would be glad to lay out why this project is so important to Wilmington and the needs of this community. Please let me know if you require any additional information.

Mike Kozlosky
Executive Director/Sr. Transportation Planner
Wilmington MPO/City of Wilmington
(910) 342-2781

Joanna_Harrington@URSCorp.com
12/05/2008 11:34 AM

To mike.kozlosky@wilmingtonnc.gov
cc David_Griffin@URSCorp.com
Subject Cape Fear Skyway Purpose & Need question

Hi Mike,

We are in the process of revising the Purpose and Need Statement for the Cape Fear Skyway project, and had a few requests for information that may be helpful with the document.

- Are there any products from the LRTP process for the Cape Fear Skyway that may be helpful during the NEPA process? Such as: problem statements, environmental resources, travel demand modeling (traffic forecasting), alternatives screening (any alternatives considered but eliminated?), and public involvement (controversial issues, community context).
- Can you forward the formal toll enforcement legislation that was passed in July 2008?

Please let me know if you need additional information. Thanks in advance for your help!

Joanna

Joanna M. Harrington
Environmental Planner
URS Corporation
1600 Perimeter Park Drive, Suite 400
Morrisville, North Carolina 27560
919.461.1434 (direct)
919.461.1415 (fax)
e-mail: joanna_harrington@urscorp.com

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(See attached file: 20081208181942312.pdf) 20081208181942312.pdf 20081215143256297.pdf



Mike.Kozlosky@wilmingtonnc.gov

01/14/2009 06:40 PM


To Joanna_Harrington@URSCorp.com

cc

bcc

Subject Re: Cape Fear Skyway question about Flossie Bryant Tract

History:

 This message has been forwarded.

Joanna,

The property is currently 2/3 County owned and 1/3 heirs owned. This property is still in litigation. The County would like to turn the property into a park, but is waiting for a decision on the Skyway before they would proceed.

Mike Kozlosky
Executive Director/Sr. Transportation Planner
Wilmington MPO/City of Wilmington
(910) 342-2781

Joanna_Harrington@URSCorp.com

01/08/2009 11:16 AM

To Mike.Kozlosky@wilmingtonnc.gov

cc

Subject Cape Fear Skyway question about Flossie Bryant Tract

Hi Mike,

I was wondering if you were aware of the status of Flossie Bryant Tract in Wilmington, and what the city and/or county's plans are for turning it into a park? We are in the process of updating our bridge study report, and want to include reference to this tract and its status.

Thanks,
Joanna

Joanna M. Harrington
Environmental Planner
URS Corporation
1600 Perimeter Park Drive, Suite 400
Morrisville, North Carolina 27560
919.461.1434 (direct)
919.461.1415 (fax)
e-mail: joanna_harrington@urscorp.com

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STATE OF NORTH CAROLINA
TURNPIKE AUTHORITY

BEVERLY E. PERDUE
GOVERNOR

1578 MAIL SERVICE CENTER, RALEIGH, N.C. 27699-1578

DAVID W. JOYNER
EXECUTIVE DIRECTOR

February 2, 2009

Mike Kozlosky
Executive Director, Wilmington Urban Area MPO
City of Wilmington
PO Box 1810
Wilmington, North Carolina 28402

RE: Cape Fear Skyway: STIP Project Number U-4738

Mr. Kozlosky:

This letter is in response to your request for information on possible Cape Fear River crossing locations that are being considered by the North Carolina Turnpike Authority (NCTA). Attached are Cadd files of three possible options for crossing the Cape Fear River between NC 133 and US 421. Each option—a northern, central and southern option—also include assumptions for interchange concepts and location, navigational channel clearances and bridge type. The central option follows the same general route as the Feasibility Study completed by the North Carolina Department of Transportation in August 2003.

Please note that these options are only a few of a range of options that may be considered by the NCTA as the project study progresses. As such, the alignments, interchange configurations and navigational channel assumptions are preliminary and subject to change. As you know, the final location and design of the Cape Fear Skyway will be the outcome of extensive environmental studies, traffic operations analyses, engineering design and stakeholder involvement.

If you need additional information, please feel free to contact me at (919) 571-3004 or jennifer.harris@ncturnpike.org.

Sincerely,

A handwritten signature in cursive script that reads "Jennifer Harris".

Jennifer Harris, PE
Staff Engineer

cc w/o attachment: Steve DeWitt, PE – NCTA-Chief Engineer
Tracy Roberts, AICP – HNTB NCTA/GEC
David Griffin, CEP – URS Corporation

Attachment: CD containing Cadd files and PDF figures of various Cape Fear River crossing options between NC 133 and US 421



David Griffin/Morrisville/URSCorp

02/11/2009 06:14 PM

To deggert@capefearcog.org

cc jennifer.harris@ncturnpike.org, tracy.roberts@ncturnpike.org,
steve.dewitt@ncturnpike.org, Joanna
Harrington/Morrisville/URSCorp@URSCorp

bcc

Subject Cape Fear Syway 2/18/9 Presentation - FILE ATTACHED

Don -

Presentation attached. Feel free to call me with questions / clarifications.

David G.



Presentation_Cape Fear Skyway_021809.ppt

David A. Griffin, CEP

Vice President

Manager, Environmental Planning & Analysis Group

URS Corporation

1600 Perimeter Park Drive

Morrisville, North Carolina 27560

Office phone: 919/461-1100

Direct: 919/461-1446

Cell: 919/345-9924

Fax: 919/461-1415


e-mail: david_griffin@urscorp.com

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Mike.Kozlosky@wilmingtonnc.gov
02/25/2009 08:53 AM

To Joanna_Harrington@URSCorp.com
cc
bcc
Subject Re: Fw: Cape Fear Skyway Purpose & Need question

History:  This message has been replied to.

Joanna,

The Greater Wilmington Long Range Transportation Plan dated March 2001 includes a Technical report for the 1997/2025 Transportation Study Computer Model Analysis. Included in this report is a "Purpose and Need Statement" that addresses Safety Issues for the Southern Bridge. Below please find the

"Safety Issues:

The Southern Bridge project will enhance safety on the Wilmington street network by improving access to the City of Wilmington. The project will help to reduce congestion and the potential for accidents by providing the street network with additional capacity to handle the needs of this growing community. Due to the location of the facility, ships accessing the NC State Port at Wilmington must come and go on the tides giving no regard to the peak hour surface traffic. When the tides and peak hour traffic coincide traffic congestion on the Memorial Bridge is at an all time high. There is no way an emergency response vehicle or any vehicle for that matter can proceed at the emergency response speed through this area during these recurring peaks.

The Southern Bridge would also help to address the need to evacuate the City of Wilmington and/or New Hanover County due to emergency events. It is possible that New Hanover County will need to be evacuated due to hurricanes. Or an incident at either the Brunswick County Nuclear Energy Plant or the General Electric Nuclear fuel processing plant located on Castle Hayne Road could require evacuation. Raising the bridges or an incident on either of the existing drawbridges makes access to southbound US 17 or US 74/76 during emergencies problematic at best. Another non-drawbridge crossing of the Cape Fear River would eliminate this concern."

If you need any additional information, please let me know.

Mike Kozlosky
Executive Director/Sr. Transportation Planner
Wilmington MPO/City of Wilmington
(910) 342-2781
<http://www.wmpo.org>

Joanna_Harrington@URSCorp.com

02/24/2009 10:29 AM

To mike.kozlosky@wilmingtonnc.gov
cc
Subject Fw: Cape Fear Skyway Purpose & Need question

Do you by any chance have any of this information? Call me if you need to discuss.

Thanks,

Joanna

Joanna M. Harrington
Environmental Planner
URS Corporation
1600 Perimeter Park Drive, Suite 400
Morrisville, North Carolina 27560
919.461.1434 (direct)
919.461.1415 (fax)
e-mail: joanna_harrington@urscorp.com

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----- Forwarded by Joanna Harrington/Morrisville/URSCorp on 02/24/2009 10:26 AM -----

Joanna Harrington/Morrisville/URSCorp

02/03/2009 10:14 AM

To Mike.Kozlosky@wilmingtonnc.gov

cc

Subject Re: Cape Fear Skyway Purpose & Need question 

Apparently the plan states that the Cape Fear Skyway "would accomplish the following: serve intermodal needs of the North Carolina Ports, serve needs of commuter and tourist trips, enhance safety on the Wilmington street network by improving access and capacity, and address evacuation needs." NCTA wants us to define exactly what evacuation needs they are discussing, such as hurricane or emergency evacuation (and I don't have the document to confirm).

Also, can you provide me with the source for this document (and year)?

Thanks so much for your assistance with this,
Joanna

Joanna M. Harrington
Environmental Planner
URS Corporation
1600 Perimeter Park Drive, Suite 400
Morrisville, North Carolina 27560
919.461.1434 (direct)
919.461.1415 (fax)
e-mail: joanna_harrington@urscorp.com

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▼ Mike.Kozlosky@wilmingtonnc.gov

Mike.Kozlosky@wilmingtonnc.gov

02/02/2009 09:44 PM

To "Joanna_Harrington" <Joanna_Harrington@URSCorp.com>

cc

Subject Re: Cape Fear Skyway Purpose & Need question

Joanna,

The document is currently not online because it is dated. If you provide me with the question, I will try to provide the answer. Otherwise, please provide a link to a ftp site and I will upload the document. Thanks.

Mike

Sent via Blackberry

From: Joanna_Harrington
Sent: 01/31/2009 03:08 PM EST
To: Mike Kozlosky
Subject: Cape Fear Skyway Purpose & Need question

Hi Mike,

Is the **Greater Wilmington Urban Area Transportation Plan 1999-2025** technical report (not map) still available online? There is a reference to it in the Skyway purpose and need statement that I need to verify.

Thanks,
Joanna

Joanna M. Harrington
Environmental Planner
URS Corporation
1600 Perimeter Park Drive, Suite 400
Morrisville, North Carolina 27560
919.461.1434 (direct)
919.461.1415 (fax)
e-mail: joanna_harrington@urscorp.com



Mike.Kozlosky@wilmingtonnc.gov

03/09/2009 03:56 PM

To Joanna_Harrington@URSCorp.com

cc

bcc

Subject Fw: traffic

History:



This message has been replied to and forwarded.

Joanna,

Per our discussion, attached please find the revised development proposal for the River Lights development on River Road. If you have any additional questions, please let me know.

Mike Kozlosky
Executive Director
Wilmington MPO
910-342-2781
<http://www.wmpo.org>



Help us identify tomorrow's travel needs today.
Take our survey at CapeFearCommutes.org




PDMP CURRENT PROPOSED 042108.pdf



Mike.Kozlosky@wilmingtonnc.gov
04/28/2009 10:26 AM

To Joanna_Harrington@URSCorp.com
cc
bcc
Subject Re: Cape Fear Skyway

History:  This message has been replied to and forwarded.

Joanna,

I sent the report the otehr day and it got kicked-back to me. I re-sent it yesterday afternoon so you should receive it either today or tomorrow. I will have to go back and research if this plan was the first to include the Skyway. However, I am sure other plans included the Souther Outer Loop that was killed due to development near the coast. Let me see if I can track some information down and send it to you.

Mike Kozlosky
Executive Director
Wilmington MPO
910-342-2781
<http://www.wmpo.org>



Help us identify tomorrow's travel needs today.
Take our survey at CapeFearCommutes.org

Joanna_Harrington@URSCorp.com

04/28/2009 10:16 AM

To Mike.Kozlosky@wilmingtonnc.gov
cc
Subject Cape Fear Skyway

Hi Mike,

Thanks for sending along the 1999-2025 transportation plan. As soon as we receive it, I'll put it back in the mail to you once we've gotten the information from it that we need. I had one question that I meant to ask you when we spoke on the phone - is this the first plan to include the CFS project? I'm trying to beef up our Purpose and Need document, and want to include a little more history.

Thanks again for your help,
Joanna

Joanna M. Harrington
Environmental Planner
URS Corporation
1600 Perimeter Park Drive, Suite 400
Morrisville, North Carolina 27560
919.461.1434 (direct)
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e-mail: joanna_harrington@urscorp.com

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David Griffin/Morrisville/URSCorp
10/02/2009 09:24 AM

To Joanna Harrington/Morrisville/URSCorp@URSCorp
cc
bcc
Subject Fw: Commercial vehicle summary

David A. Griffin, CEP
Vice President

Manager, Environmental Planning & Analysis Group
URS Corporation
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
Office phone: 919/461-1100
Direct: 919/461-1446
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e-mail: david_griffin@urscorp.com

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----- Forwarded by David Griffin/Morrisville/URSCorp on 10/02/2009 09:24 AM -----



Mike.Kozlosky@wilmingtonnc.gov
08/20/2009 04:18 PM

To david_griffin@urscorp.com,
Peter_Trencansky@URSCorp.com
cc rob.ayers@dot.gov, "Harris, Jennifer"
<jennifer.harris@ncturnpike.org>, "Roberts, Tracy"
<tracy.roberts@ncturnpike.org>
Subject Fw: Commercial vehicle summary

David and Peter,

Brunswick County grew from a population of 73,141 in 2000 to a population of 94,964 in 2006. Over a 20,000 person influx in just 6 years. I have requested 2004 and 2008 aerials from Brunswick County that will let you know the growth and development that has occurred in the past few years. I will send these out once I receive them. If there is any additional information that you believe may be useful, please let me know and I will try to provide you with this information. Thanks.

Mike Kozlosky
Executive Director
Wilmington MPO
910-342-2781

www.wmpo.org

----- Forwarded by Mike Kozlosky/wilm on 08/20/2009 04:02 PM -----

**Mike
Kozlosky/wilm**

08/20/2009 10:52 AM To david_griffin@urscorp.com, Peter_Trencansky@URSCorp.com
cc sdyork@ncdot.gov, george.hoops@fhwa.dot.gov, Mike Kozlosky/wilm@Wilmington,
tracy.roberts@ncturnpike.org, Rob.ayres@dot.gov
Subje Fw: Commercial vehicle summary
ct

Attached please find some commercial data from the External Origin-Destination survey that was conducted that may provide some assistance with the P/N for the Cape Fear Skyway.

Mike Kozlosky
Executive Director
Wilmington MPO
910-342-2781
www.wmpo.org

----- Forwarded by Mike Kozlosky/wilm on 08/20/2009 10:50 AM -----

"Stacey Bricka" <sbricka@nustats.com>

08/20/2009 10:33 AM

To <mike.kozlosky@wilmingtonnc.gov>
cc
Subject Commercial vehicle summary

Let me know what else I can provide!

Stacey



mark_commvehinfo.doc



David Griffin/Morrisville/URSCorp

10/02/2009 05:12 PM

To Joanna Harrington/Morrisville/URSCorp@URSCorp

cc

bcc

Subject Fw: Northeast Brunswick County

History:



This message has been forwarded.

David A. Griffin, CEP
Vice President

Manager, Environmental Planning & Analysis Group
URS Corporation
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
Office phone: 919/461-1100
Direct: 919/461-1446
Cell: 919/345-9924
Fax: 919/461-1415
e-mail: david_griffin@urscorp.com

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----- Forwarded by David Griffin/Morrisville/URSCorp on 10/02/2009 05:12 PM -----



Mike.Kozlosky@wilmingtonnc.gov

10/02/2009 04:52 PM

To David_Griffin@URSCorp.com

cc

Subject Fw: Northeast Brunswick County

David,

Attached please find GIS shapefiles for the Brunswick County Sanitary District and Brunswick County Townships. I am not sure which you were referring to in the P&N, but wanted to share these with you. If you have any additional questions, please let me know.

Mike Kozlosky
Executive Director
Wilmington MPO
910-342-2781
www.wmpo.org

----- Forwarded by Mike Kozlosky/wilm on 10/02/2009 04:50 PM -----

"Kirstie Dixon" <kdixon@brunscoc.net>

10/02/2009 04:47 PM

To <Mike.Kozlosky@wilmingtonnc.gov>
cc
Subject Northeast Brunswick County















Attached are the 2 GIS layer that we spoke about on the phone (Brunswick County Sanitary Districts & Brunswick County Townships).

Please confirm that you received this e-mail.

Thanks,

Kirstie Dixon

Planner II
Brunswick County Planning
PO Box 249
Bolivia, NC 28422
910/253-2027
(800) 621-0609
Fax: 910/253-2024
kdixon@brunscos.net

  
Brunswick_County_Townships.shx Brunswick_County_Sanitary_Districts.dbf Brunswick_County_Sanitary_Districts.shp
  
Brunswick_County_Sanitary_Districts.prj Brunswick_County_Sanitary_Districts.sbn Brunswick_County_Sanitary_Districts.sbx
  
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STATE OF NORTH CAROLINA
TURNPIKE AUTHORITY

BEVERLY E. PERDUE
GOVERNOR

1578 MAIL SERVICE CENTER, RALEIGH, N.C. 27699-1578

DAVID W. JOYNER
EXECUTIVE DIRECTOR

December 9, 2010

Mr. Mike Kozlosky
Executive Director
Wilmington Urban Area MPO
PO Box 1810
Wilmington, NC 28402

Dear Mr. Kozlosky:

Mike

Thank you for your letter conveying the resolution from the Transportation Advisory Committee encouraging the Turnpike Authority to consider pedestrian and bicycle facilities in the design of the Cape Fear Skyway Bridge.

Potential alignment corridors for the Cape Fear Skyway are currently being developed for further study in the Environmental Impact Statement (EIS), which is scheduled to be completed in 2013. The project studies will take into consideration pedestrian and bicycle accommodations along the facility, including the bridge that will cross the Cape Fear River. The findings of the detailed study will be addressed in the Draft EIS.

Any recommendations made for these accommodations will be consistent with the policies and procedures of the North Carolina Department of Transportation (NCDOT) Division of Bicycle and Pedestrian Transportation.

Sincerely,

David

David W. Joyner

C: Steve DeWitt
Jennifer Harris ✓

Resolution



Town Council
Town of Leland
North Carolina

Introduced by: Town Council

Date: 03/21/13

**RESOLUTION REQUESTING THE NCDOT, NC TURNPIKE AUTHORITY,
AND THE WILMINGTON METROPOLITAN PLANNING ORGANIZATION
TO AMEND THE CAPE FEAR RIVER CROSSING ENVIRONMENTAL STUDY
AREA TO INCLUDE A NEWLY IDENTIFIED VIABLE OPTION TO CROSS
THE CAPE FEAR RIVER**

WHEREAS, the Wilmington Urban Area Metropolitan Planning Organization (WMPO) provides transportation planning service for the City of Wilmington, Town of Carolina Beach, Town of Kure Beach, Town of Wrightsville Beach, Town of Leland, Town of Belville, Town of Navassa, New Hanover County, Brunswick County, Pender County, Cape Fear Public Transportation Authority; and

WHEREAS, the Purpose and Need for an improved crossing over the Cape Fear River includes improvement to traffic flow and enhance freight movements beginning in the vicinity of US 17 and the future I-140 in Brunswick County across the Cape Fear River to US 421 near the Port of Wilmington in New Hanover County; and

WHEREAS, the NCDOT has taken over the project from the Turnpike Authority and will begin anew the merger process at Consensus Point #1, as required by policy; and

WHEREAS, at public workshop held in the Town of Leland and Belville on October 30, 2010, the overwhelming majority made clear its opposition to the favored "northern alignment" for the Skyway Bridge; and

WHEREAS, ~~THE~~ the North Carolina Department of Transportation and NCTA have received affirmation from the WMPO to continue work on the completion of the environmental document to determine the best transportation route to improve mobility and safety between New Hanover and Brunswick Counties; and

WHEREAS, a range of alternative concepts are being evaluated and included in that study to identify those that best serve the project's purpose and need as well as minimize the impacts to the human and natural environment; and

WHEREAS, the Town of Leland's position is that in addition to minimizing the impacts to the human and natural environment, such study should ensure all efforts are made to protect the sovereign boundaries of the town; and


WHEREAS, the Town of Leland has identified another potential crossing site from Independence Blvd. across the Cape Fear River slightly south of Town Creek; heading in a general westwardly direction to the intersection of US 17 and NC 87 at Bell Swamp; and

Resolution



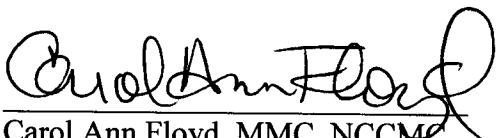
Town Council
Town of Leland
North Carolina

NOW, THEREFORE, be it resolved that the Town of Leland requests the NCDOT, NCTA and the WMPO amend the Cape Fear River Crossing Environmental Study Area to include a newly identified viable option to cross the Cape Fear River at Independence Blvd.


Brenda Bozeman, Mayor

Adopted at a regular meeting
on March 21, 2013

Attest:


Carol Ann Floyd, MMC, NCCMC
Town Clerk





1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1415

RECORD OF TELEPHONE CONVERSATION

DATE: April 3, 2015		PROJECT NO. 60400312	
RECORDED BY: Celia Foushee		OWNER/CLIENT: NCDOT	
TALKED WITH: Jimmy Strickland		FROM: Town of Leland – Public Utilities Director	
NATURE OF CALL (INCOMING OR OUTGOING); Outgoing			
ROUTE TO:	FOR INFORMATION		FOR ACTION
MAIN SUBJECT OF CONVERSATION: Spoke with Jimmy Strickland regarding any changes in the water and sewer service for the Town of Leland. I had previously emailed him the information we had in the ICE and asked if he would verify it is still correct. He responded the information for Leland is correct still and the website should have the latest numbers (if they have changed).			



1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1415

RECORD OF TELEPHONE CONVERSATION

DATE: April 7, 2015		PROJECT NO. 60400312	
RECORDED BY: Celia Foushee		OWNER/CLIENT: NCDOT	
TALKED WITH: Athena Williams		FROM: Belville Town Administrator	
NATURE OF CALL (INCOMING OR OUTGOING); Outgoing			
ROUTE TO:	FOR INFORMATION	FOR ACTION	
MAIN SUBJECT OF CONVERSATION: Spoke with Athena Williams regarding any development plans within Belville. She discussed the Riverwalk plans that are also discussed in the Belville Renaissance Plan.			

Correspondence/Other/Asheville Planning Dept/ROC Cullen_Angie HUD 01_23_09



1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
Telephone: (919) 461-1100
Facsimile: (919) 461-1415

RECORD OF TELEPHONE CONVERSATION

DATE: April 9, 2015		PROJECT NO. 60400312	
RECORDED BY: Celia Foushee		OWNER/CLIENT: NCDOT	
TALKED WITH: Marc Pages		FROM: Brunswick County Planning	
NATURE OF CALL (INCOMING OR OUTGOING); Outgoing			
ROUTE TO:	FOR INFORMATION	FOR ACTION	
MAIN SUBJECT OF CONVERSATION:			
<p>Spoke with Marc Pages regarding any development plans in the project study area; specifically surrounding the intersection at I-140 and US 17 at Zion Church Road and for the unincorporated area north of Brunswick Forest. He responded there are no immediate plans for development in the areas.</p> <p>Requested Marc send AECOM their future land use files so we may incorporate them into the LUSA/CIA. Files received 4/9/15.</p>			



Preservation Leadership Since 1966

April 20, 2017

Wilmington Urban Area Metropolitan Planning Organization
P.O. Box 1810
Wilmington, North Carolina 28402

Dear Board Members of the Wilmington Metropolitan Planning Organization:

Thank you for your service on the board of the very important Wilmington Metropolitan Planning Organization (WMPO). I write on behalf of the Historic Wilmington Foundation (HWF) regarding the North Carolina Department of Transportation (NCDOT) Cape Fear Crossing Study currently underway to make an urgent request in advance of both the WMPO work session on April 26 and the CP2 meeting planned for late May.

The HWF understands the critical need for, and the economic importance of, a new bridge across the Cape Fear River (the "Cape Fear Crossing") to carry the ever-growing volume of vehicles between New Hanover and Brunswick Counties as well as commercial and tourism through-traffic. We fully support the great work the WMPO is doing to make the much-needed Cape Fear Crossing a reality.

However, for the reasons set out below, we oppose any new or expanded crossing at or near the existing Cape Fear Memorial Bridge. We respectfully ask that, at the upcoming CP2 Meeting, the WMPO requires that these alternatives (Alternatives F/P and V in the NCDOT/NEPA Study, and referred to herein as "Memorial Bridge Alternatives") be removed from consideration.

Wilmington's downtown is a densely built, growing, tightly knit urban center with a concentration of culturally significant nineteenth century historic structures built on an eighteenth century street grid. The fact that it is bounded on one side by the Cape Fear River further complicates and limits the City's traffic movement options. This historic core is the business, government and cultural center for Wilmington and New Hanover County as well as the Cape Fear region. It contains Wilmington's most significant historic structures, tourist attractions, and a concentration of businesses and neighborhoods that add significantly to the tax base and the region's quality of life. In fact, our urban center contains eight National Register districts with more than 6000 homes and buildings. It is an important economic driver for the entire region. Bridge traffic (much of which is through traffic bound for the Port, beaches, and large employers outside downtown) should not be routed through Wilmington's historic core.

The Memorial Bridge Alternatives will bring ever growing traffic, pollution and noise into downtown Wilmington's already very congested core. They also require significant widening of roads and huge on/off ramps. As a result, these alternatives will do irreparable damage to National Register and locally designated historic districts, which are essential to New Hanover County's and Wilmington's tourist industry, economy, heritage and brand. In fact, these assets are a part of the region's identity.

In addition, the Memorial Bridge Alternatives will turn Dawson and Wooster Streets into barriers that further separate the city north and south and create social and economic divisions in our community. These barriers will isolate and damage established neighborhoods and important economic re-development on Wilmington's Southside.

We are advised that best practices in transportation planning call for routing through-traffic around dense urban centers using by-passes and ring roads. This guiding principle and the facts dictate that a crossing further south nearer the Port, that by-passes downtown, is a better solution for our region. Such a southerly crossing would move traffic to and from the Port, beaches and Wilmington's largest employers more directly and efficiently, without doing irreversible damage to New Hanover County's and Wilmington's economy, history, culture and social fabric. For these reasons, we respectfully urge that the Memorial Bridge Alternatives be removed from consideration and that NCDOT's Least Environmentally Damaging Practicable Alternative study focus solely on the southern alternatives.

Thank you for considering our concerns and request.

Respectfully,



Walker Abney,
President, Board of Trustees

Cc: Secretary Susi Hamilton, Department of Natural and Cultural Resources
Renee Gledhill-Earley, Environmental Review Coordinator, State Historic Preservation Office
Wilmington Port Authority
Wilmington City Council
New Hanover County Commissioners

**WILMINGTON URBAN AREA METROPOLITAN PLANNING ORGANIZATION
BOARD**

**RESOLUTION SUPPORTING ALTERNATIVE MA AND/OR ALTERNATIVE NA AS THE
WILMINGTON URBAN AREA METROPOLITAN PLANNING ORGANIZATION'S PREFERRED
ALTERNATIVES FOR THE CAPE FEAR CROSSING PROJECT**

WHEREAS, the Wilmington Urban Area Metropolitan Planning Organization provides transportation planning services for the City of Wilmington, Town of Carolina Beach, Town of Kure Beach, Town of Wrightsville Beach, Town of Belville, Town of Leland, Town of Navassa, New Hanover County, Brunswick County, Pender County, Cape Fear Public Transportation Authority and the North Carolina Board of Transportation; and

WHEREAS, Cape Fear Crossing project's purpose and need includes improvements to traffic flow and enhanced freight movements beginning in the vicinity of US 17 and the future I-140 in Brunswick County across the Cape Fear River to US 421 near the Port of Wilmington in New Hanover County; and

WHEREAS, the project is in Merger with a range of alternatives being evaluated; and

WHEREAS, Merger is a process to streamline the project development and permitting processes, agreed to by the US Army Corps of Engineers (USACE), North Carolina Department of Environmental and Natural Resources (NCDENR), Federal Highway Administration (FHWA) and North Carolina Department of Transportation (NCDOT) and supported by other stakeholder agencies and local units of government; and

WHEREAS, there are 12 detailed study alternatives currently under study for the Cape Fear Crossing project through the Merger Process; and

WHEREAS, the project is currently at Concurrence Point 2A (Bridging and Alignment Review); and

WHEREAS, the next Concurrence Point after CP2A in the Merger Process is to select the Least Environmentally Damaging Practical Alternative (Concurrence Point 3); and

WHEREAS, the North Carolina Ports Authority has indicated a height clearance requirement of 215 feet for any southern alignment to accommodate present or future shipping requirements; and

WHEREAS, the Wilmington Urban Area Metropolitan Planning Organization Board has identified their preferred alignments for the Cape Fear Crossing project.

NOW THEREFORE, be it resolved that the Board of the Wilmington Urban Area Metropolitan Planning Organization hereby supports Alternative MA and/or Alternative NA as the Wilmington Urban Area Metropolitan Planning Organization's preferred alternatives for the Cape Fear Crossing project.

ADOPTED at a regular meeting of the Wilmington Urban Area Metropolitan Planning Organization's Board on May 31, 2017.



Gary Doetsch, Chair



Mike Kozlosky, Secretary

Rocco, Joanna

From: Rocco, Joanna
Sent: Thursday, July 06, 2017 2:03 PM
To: 'jmcinnis@ncdot.gov'; 'teroberts1@ncdot.gov'
Cc: Foushee, Celia
Subject: FW: TCC Meeting- July 12th

Categories: Cape Fear Project

Link below to finalized rail realignment feasibility study. The resolution to move forward with developing this project is on their agenda for next Wednesday night.

From: Mike Kozlosky [<mailto:Mike.Kozlosky@wilmingtonnc.gov>]
Sent: Thursday, July 06, 2017 1:54 PM
To: 'Allen Serkin (aserkin@capefearcog.org)'; 'HBunch@brunscot.net'; 'jwilsey@flyilm.com'; '211_1@msn.com'; 'bits@atmc.net'; 'alfreimark@charter.net'; 'jennifer.bell@ch2m.com'; 'jsolomon@ch2m.com'; 'kehite@ncdot.gov'; 'czechlewski@wilmingtonchamber.org'; Don Bennett; Ron Satterfield; Tony Caudle; Bill McDow; 'Penny Bray'; 'Tracy Roberts'; 'townclerk@townofkurebeach.org'; 'cokeefe@nhcgov.com'; 'sburgess@nhcgov.com'; 'kbreuer@pendercountync.gov'; 'Stephanie_Ayers@ncports.com'; 'Bill_Bennett@ncports.com'; 'aeby@wavetransit.com'; 'Tyler Newman'; dvillegas@towb.org
Cc: 'ckimes@ncdot.gov'; 'tmarshall@ncdot.gov'; 'roach@ncdot.gov'; 'coliver@ncdot.gov'; 'cevans@ncdot.gov'; 'priddle@ncdot.gov'; 'rcgray@ncdot.gov'; 'bthughes@ncdot.gov'; Suraiya Motsinger; 'jhupchurch@ncdot.gov'; 'Publicworks@townofbelville.com'; 'Fussell, Karen E <kfussell@ncdot.gov> (kfussell@ncdot.gov)'; Glenn Harbeck; 'mmatheny@wavetransit.com'; 'Navassa Planning <planning@townofnavassa.org> (planning@townofnavassa.org)'; 'jerry.haire@carolinabeach.org'; 'ed.parvin@carolinabeach.org'; 'michael.cramer@carolinabeach.org'; 'Tim Owens (towens@towb.org)'; Adrienne Harrington; Amy Kimes; Brittany Strait; 'malston@townofnavassa.org'; 'Loretta.Barren@dot.gov'; Rocco, Joanna; 'abarefoot@townofleland.com'; wprease@flyilm.com; Megan O'Hare; kvafier@nhcgov.com; Dayton, Jeffrey; ajsnipes@ncdot.gov; Beth Doliboa; Josh Lopez; Heather Jarman; Norowzi, Behshad M; Ron.Lucas@dot.gov; Adrienne Cox; Sarder, Nazia; Tracy Manning; Ashli Barefoot; planning@townofbelville.com; Richard King
Subject: TCC Meeting- July 12th

TCC members:

A meeting of the Wilmington Urban Area MPO's Technical Coordinating Committee (TCC) will be held on Wednesday, July 12th at 10:00 am in the Lord Spencer Compton Conference Room at 102 North 3rd Street in downtown Wilmington. Below please find a link to the agenda packet for this meeting:

http://wdc.wmpo.s3.amazonaws.com/wp-content/uploads/2017/07/2017-07-12_TCCagenda_FINAL.pdf

Due to the size of the Rail Re-alignment Feasibility Study, I did not include it in the packet however, it can be accessed from the link below:

http://wdc.wmpo.s3.amazonaws.com/wp-content/uploads/2017/04/WRR-Feasibility-Study_20170602_Final.pdf

If you have any questions regarding this meeting, please contact me at 342-2781. Thanks.

Mike Kozlosky
Executive Director
Wilmington MPO
(910) 342-2781

Rocco, Joanna

From: McAulliffe, Todd
Sent: Thursday, July 06, 2017 9:02 AM
To: suraiya.motsinger@wilmingtonnc.gov
Cc: Foushee, Celia; Rocco, Joanna
Subject: RE: GIS Data Request
Attachments: U_4738_All_Alts_Centerlines_July_2017.zip

Categories: Cape Fear Project

Good morning Suraiya – attached is a shapefile showing the functional design centerlines for all the alternatives under consideration for U-4738. The centerlines have been merged into one file, but can be distinguished by the attribute column “Alternativ”.

Let me know if you need any additional GIS data from us.

Thanks,
Todd
704.295.2433

From: Rocco, Joanna
Sent: Monday, July 03, 2017 3:43 PM
To: McAulliffe, Todd
Cc: Foushee, Celia
Subject: FW: GIS Data Request

Todd, are you in this week? If so, mind sending her these? Just centerlines.

Sent from my iPhone using [Mail+ for Outlook](#)

From: Suraiya Motsinger
Sent: 7/3/17, 3:22 PM
To: Rocco, Joanna
Subject: GIS Data Request

Hi Joanna!

Mike asked me some questions about the Cape Fear Crossing Alignments under review and I think the easiest way to answer those questions would be through a GIS review – would it be possible to forward GIS files with all of the alignments under consideration?

Feel free to call if there are any issues/concerns.

Thanks!! ☺

Suraiya Motsinger
Senior Transportation Planner
Wilmington Urban Area Metropolitan Planning Organization (WMPO)
305 Chestnut Street, 4th Floor
Wilmington, NC 28401

Rocco, Joanna

From: Rocco, Joanna
Sent: Friday, July 14, 2017 10:20 AM
To: Suraiya Motsinger
Cc: 'jmcinnis@ncdot.gov'; 'teroberts1@ncdot.gov'; Foushee, Celia
Subject: RE: Cape Fear Crossing alternatives
Attachments: Cape Fear Crossing DSA Corridors.zip

Categories: Cape Fear Project

Hi Suraiya,

Please see the attached U-4738 detailed study alternative corridor shapefiles. Note these are not right of way limits, as these are not finalized and currently being refined in the project designs; these are limits within which technical studies and alternative alignments/functional designs were developed.

Please let me know if you need additional information.

Thanks!
Joanna

From: Suraiya Motsinger [<mailto:Suraiya.Motsinger@wilmingtonnc.gov>]
Sent: Wednesday, July 12, 2017 3:57 PM
To: Rocco, Joanna
Subject: Cape Fear Crossing alternatives

Hi Joanna –

I realize that it is too early in the process to say definitively, but Mike wants me to overlay the CFRC alignments over some potential projects *and* wants some project preliminary corridor widths to see how much of parcels could be affected. Can you help me with this? Please feel free to give me a call if you have questions about my request.

Thanks!

Suraiya Motsinger
Senior Transportation Planner
Wilmington Urban Area Metropolitan Planning Organization (WMPO)
305 Chestnut Street, 4th Floor
Wilmington, NC 28401
#(910) 341 -3234
<http://wmpo.org/>

E-mail correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

APPENDIX B: RELOCATION REPORTS

EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

☒ E.I.S. ☐ CORRIDOR ☐ DESIGN

WBS ELEMENT: 40114.1.2 COUNTY Brunswick/New Hanover Alternate B of 12 Alternate

T.I.P. No.: U-4738

DESCRIPTION OF PROJECT: ROADWAY EXTENDING FROM THE VICINITY OF US-17 BYPASS AND I-140 IN BRUNSWICK CO. TO US-421 IN NEW HANOVER CO., INCLUDING A CROSSING OF THE CAPPE FEAR RIVER

ESTIMATED DISPLACED					INCOME LEVEL				
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP
Residential	34	95	129	52	0	59	50	20	0
Businesses	51	26	77	6	VALUE OF DWELLING		DSS DWELLING AVAILABLE		
Farms	0	0	0	0	Owners		Tenants		For Sale
Non-Profit	2	1	3	0	0-20M		\$ 0-150		For Rent
					20-40M		150-250		
					40-70M		250-400		
					70-100M		400-600		
					100 UP		600 UP		
					34		95		

ANSWER ALL QUESTIONS		Explain all "YES" answers.
Yes	No	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. Will special relocation services be necessary?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. Will schools or churches be affected by displacement?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. Will business services still be available after project?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. Will relocation cause a housing shortage?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	6. Source for available housing (list).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	7. Will additional housing programs be needed?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	8. Should Last Resort Housing be considered?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	9. Are there large, disabled, elderly, etc. families?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	10. Will public housing be needed for project?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	11. Is public housing available?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	12. Is it felt there will be adequate DSS housing housing available during relocation period?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	13. Will there be a problem of housing within financial means?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	14. Are suitable business sites available (list source).
		15. Number months estimated to complete RELOCATION? 24-48 months

0-15M	15-25M	25-35M	35-50M	50 UP
0	59	50	20	0
VALUE OF DWELLING		DSS DWELLING AVAILABLE		
Owners		Tenants		
0-20M		\$ 0-150		
20-40M		150-250		
40-70M		250-400		
70-100M		400-600		
100 UP		600 UP		
34		95		

REMARKS (Respond by Number)

2. Cape Fear Center for Inquiry K-8 Cape Fear Charter School 400-600 students

3. An ample supply of similar businesses will remain available.

4. See Attached Supplemental Business List Spreadsheet

6. MLS, Newspapers, private real estate market, internet.

8. As required by law.

11. Nash County and Rocky Mount city public housing along with Section 8.

12. DSS housing will be available or built if necessary.

14. Same as #6 above.

	7/26/17		8/28/17
Right of Way Agent	Date	Relocation Coordinator	Date

	Parcel	Business	Size	# Employees
1	55	Carolina Marine Terminal	Medium	15 to 25
2	56	ARGOS Redi-Mix	Medium	15 to 25
3	57	Petroleum Fuel Terminal	Medium	15 to 25
4	58	Chemserve	Medium	15 to 25
5	72	Ports Authority Stockyard	Small	3 to 10
6	102	Southeastern Machinery & Welding	Small	3 to 10
7	124	Lovitts Car Sales	Small	3 to 10
8	128	New York Forwarding Services	Medium	15 to 25
9	128	Gulf American Line	Medium	15 to 25
10	129	WECT	Large	50+
11	138	Bowers Transmission Service	Small	3 to 10
12	152	No Name	Small	3 to 10
13	152	No Name	Small	3 to 10
14	152	No Name	Small	3 to 10
15	152	No Name	Small	3 to 10
16	188	Dollar General	Small	3 to 10
17	188	Ming Wak	Small	3 to 10
18	188	Dominos	Small	3 to 10
19	188	Electra Vapor	Small	3 to 10
20	206	U-Haul	Small	3 to 10
21	207	Hardees	Small	3 to 10
22	209	KFC	Small	3 to 10
23	211	Rite Aid	Medium	15 to 25
24	214	Shipyard Medical Center	Small	3 to 10
25	214	Colortyme	Small	3 to 10
26	214	Harbor Freight Tools	Medium	15 to 25
27	214	Roses	Large	50+
28	215	Asian Buffet	Small	3 to 10
29	216	McDonalds	Small	3 to 10
30	217	State Farm	Small	3 to 10
31	218	CVS	Medium	15 to 25
32	219	A-1 Self Storage	Small	3 to 10
33	220	Economy Signs	Small	3 to 10
34	221	Dry Cleaners	Small	3 to 10
35	222	Addis Construction	Small	3 to 10
36	225	Ken Baker Originals	Small	3 to 10
37	226	Yucca Massage	Small	3 to 10
38	226	Vacant Business	Small	3 to 10
39	227	Coastal Horizons	Large	50+
40	229	Coastal Horizons	Large	50+
41	231	Vacant Business	Small	3 to 10
42	232	Car Wash	Small	3 to 10
43	235	Coastal Horizons	Large	25 to 50
44	235	Chiropractic Center of Wilmington	Small	3 to 10
45	236	A-1 Safe and Lock	Small	3 to 10
46	240	Cape Fear Center For Inquirey K-8 Charter School	Large	50+
47	244	Family Dollar	Large	50+

48	247	Subway	Small	3 to 10
49	247	MB Super Discounty Cigarette Outlet	Small	3 to 10
50	247	Tienda El Mercadito	Small	3 to 10
51	247	Antojitos of Wilmington	Small	3 to 10
52	247	Nail World	Small	3 to 10
53	247	Paola's Hair Salon & Barber Shop	Small	3 to 10
54	247	Boostmobile	Small	3 to 10
55	247	Bridal Elegance	Small	3 to 10
56	247	Oprah Beauty Supply	Small	3 to 10
57	247	Horison's Development, LLC	Small	3 to 10
58	247	Smith Properties, LLC	Small	3 to 10
59	247	Battle Lacrosse & Sports	Small	3 to 10
60	247	WEB Screen Printing	Small	3 to 10
61	247	Dulceria "OAX"	Small	3 to 10
62	247	Artesanias "OAX"	Small	3 to 10
63	247	Complete Nutrition	Small	3 to 10
64	247	Bouelle Martial Arts	Small	3 to 10
65	247	Mom's Studios	Small	3 to 10
66	247	The Door	Small	3 to 10
67	247	City of Wilmington Employee Health Services	Small	3 to 10
68	248	A Storage Place	Small	3 to 10
69	256	Taft, Taft and Haigler	Small	3 to 10
70	257	Dish	Small	3 to 10
71	258	Hoffman and Hoffman	Small	3 to 10
72	259	No Name	Small	3 to 10
73	260	Sand Dollar	Small	3 to 10
74	261	Port City Carpet	Small	3 to 10
75	263	Pink Hope	Small	3 to 10
76	264	Atlantic Prosthetic Devices	Small	3 to 10
77	265	Port City Land Surveying	Small	3 to 10
78	266	Health Care Business	Small	3 to 10
79	267	DFIT Personal Training	Small	3 to 10
80	269	Masonic Lodge	Small	3 to 10

EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

☒ E.I.S. ☐ CORRIDOR ☐ DESIGN

WBS ELEMENT:		COUNTY	New Hanover	Alternate	B	of	6	Alternate
T.I.P. No.:	U-4738							
DESCRIPTION OF PROJECT:	Roadway extending from the vicinity of US 17 Bypass and I-140 in Brunswick Co. to US 421 in New Hanover Co., including a crossing of the Cape Fear River.							

ESTIMATED DISPLACED					INCOME LEVEL							
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP			
Residential	3	17	20	10	0	0	10	10	0			
Businesses	3	37	40	8	VALUE OF DWELLING				DSS DWELLING AVAILABLE			
Farms	0	0	0	0	Owners		Tenants		For Sale		For Rent	
Non-Profit	0	0	0	0	0-20M	0	\$ 0-150	5	0-20M	0	\$ 0-150	0
ANSWER ALL QUESTIONS Yes No Explain all "YES" answers.					20-40M	0	150-250	10	20-40M	0	150-250	0
					40-70M	0	250-400	0	40-70M	5	250-400	0
					70-100M	0	400-600	0	70-100M	11	400-600	3
					100 UP	3	600 UP	2	100 UP	310	600 UP	213
					TOTAL	3		17		326		216
REMARKS (Respond by Number) *Income level and dwelling value were measured in thousands. 1) There are several potentially complex relocations identified within the limits of Alternative B (Alt B) - Carolina Marine Terminal will require the relocation of a rather large volume of aggregate material as well as the moving of heavy industrial equipment. A complex move as such will entail a lengthy process, high relocation expenses, and heavy monitoring. Above normal costs may come in the form of relocation claims for actual direct loss of tangible personal property as well as substitute personal property due to the complex nature of moving aggregate materials and heavy industrial machinery. - Petroleum Fuel Company will entail a similar level of complexity, time, and relocation expenses as stated above for Carolina Marine Terminal - WECT TV 6 is also located within the limits of Alt B. Being A 24-hour news and weather television station a functional replacement will be required to avoid any downtown. Scheduling concerns will need to be addressed as this move will most likely be conducted over several stages. Above normal costs can be expected due to the need for specialized moving equipment and actual direct loss of tangible personal property as well as substitute personal property relocation claims being that it is probably more feasible to replace much of their in place equipment rather than move it. - There is a school (Cape Fear K-8 Educational) as well as a												
See Remarks												
1. Will special relocation services be necessary?												
2. Will schools or churches be affected by displacement?												
3. Will business services still be available after project?												
4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.												
5. Will relocation cause a housing shortage?												
6. Source for available housing (list).												
7. Will additional housing programs be needed?												
8. Should Last Resort Housing be considered?												
9. Are there large, disabled, elderly, etc. families?												
10. Will public housing be needed for the project?												
11. Is public housing available?												
12. Is it felt there will be adequate DSS housing available during relocation period?												
13. Will there be a problem of housing within financial means?												
14. Are suitable business sites available (list source).												
15. Number months estimated to complete RELOCATION?					18 - 24 Months							

fire station impacted by Alt B. Both will require functional replacements causing scheduling concerns as well as additional relocation expenses similar to those mentioned in my explanation above.

Scooter's Skating Center is also impacted Alt B. Locating a replacement site that can accommodate a very particular business such as a skating rink may prove time consuming and costly. Also impacted is a strip center that includes approximately 20 small businesses that will presumably require a similarly modeled replacement retail site (strip center). Please note that 5 of the residences impacted by Alt B are duplexes.

2) A school (Cape Fear K-8 Educational) as well as a church (Long Leaf Church) will be impacted by Alt B. As stated above the school will require a functional replacement.

3) There are several unimpacted businesses within Alt B that will remain functional after the project.

4) There are 40 businesses that will be impacted by the project. Please see below for entire list.

6) MLS, Internet, Housing Authority, Apartment Listings, Newspaper, For Sale By Owner – After researching the area, more than 50 residential listings were discovered as replacement options for owners and tenants impacted by the project.

8) The area impacted by the Alt B consists of majority low-income housing. Review of the area revealed that there is available housing, however; due to rising home prices, scarce inventory for low income housing, and assumed lower levels of income, finding comparable housing within the displacee's financial means may be challenging. Last resort housing in the form of supplemental payments as well as rental assistance payments must be considered given the market's current conditions.

11) There is public housing available, however; it is not expected to be necessary for this project.

12) Review of the area revealed that there is adequate DSS housing available (more than 50 listings) but securing a replacement dwelling will require additional assistance as explained above in item no. 8.




13) See explanation under item number 8. The impacted area is a low-income neighborhood. Locating housing within the displacee's financial means will most likely necessitate the use of supplemental payments and rental assistance payments to secure comparable replacement dwellings.

14) There are available business sites within the project limits. Resources used are: LoopNet, MLS, Internet, and Newspaper (Located more than 50 listings for office, retail, and industrial space)

Business Locations By parcel, name, size, & number of employees

Parcel # ROW Comparis on Map	Business	Size	Bus.Type	# Employees
55	Carolina Marine Terminal	Medium	Industrial - Marine Bulk Cargo Handling	15 to 25
57	Petroleum Fuel Terminal	Medium	Industrial – Petroleum Storage and Distribution	15 to 25
124	Lovitt's Car Sales	Small	Retail	3 to 10
128	New York Forwarding Services	Medium	Transportation & Shipping	15 to 25
128	Gulf American Line	Medium	Transportation & Shipping	15 to 25
129	WECT	Large	TV Station	50+
146	Wilmington Shipping Co.	Medium	Storage and Shipping	15 to 25
146	Inttek	Medium	Technology Solutions	15 to 25
151	Scooter's Skating Center	Medium	Entertainment	15 to 25
152	Poseidon Plaza	Small	Commercial Services	3 to 10
152	Poseidon Plaza	Small	Commercial Services	3 to 10
152	Poseidon Plaza	Small	Commercial Services	3 to 10
152	Poseidon Plaza	Small	Commercial Services	3 to 10
152	Poseidon Plaza	Small	Commercial Services	3 to 10

221	Modern Cleaners	Small	Dry Cleaning Service	3 to 10
221	Frontier Food-To-Go	Small	Retail – Food Service	3 to 10
238	City of Wilmington Fire Department	Medium	Government - Public Service	15 to 25
240	Cape Fear Center For Inquiry K-8 Charter School	Large	Education	50+
244	Family Dollar	Medium	Retail	15 to 25
247	Subway	Small	Retail – Food Service	3 to 10
247	MB Super Discount Cigarette Outlet	Small	Retail	3 to 10
247	Tienda El Mercadito	Small	Retail	3 to 10
247	Antojitos of Wilmington	Small	Retail	3 to 10
247	Nail World	Small	Retail	3 to 10
247	Paola's Hair Salon & Barber Shop	Small	Retail	3 to 10
247	Boostmobile	Small	Retail	3 to 10
247	Bridal Elegance	Small	Retail	3 to 10
247	Oprah Beauty Supply	Small	Retail	3 to 10
247	Horison's Development, LLC	Small	Real Estate	3 to 10
247	Smith Properties, LLC	Small	Real Estate	3 to 10
247	Battle Lacrosse & Sports	Small	Retail	3 to 10
247	WEB Screen Printing	Small	Retail	3 to 10
247	Dulceria "OAX"	Small	Retail	3 to 10
247	Artesanias "OAX"	Small	Retail	3 to 10
247	Complete Nutrition	Small	Retail	3 to 10
247	Bouelle Martial Arts	Small	Retail	3 to 10
247	Mom's Studios	Small	Retail	3 to 10
247	The Door	Small	Retail	3 to 10
247	City of Wilmington Employee Health Services	Small	Govt. – Public Service	3 to 10
248	A Storage Place	Small	Storage	3 to 10

 Right of Way Agent	01-23-19 Date		 Relocation Coordinator	01/25/2019 Date
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FRM15-E

EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

☒ E.I.S. ☐ CORRIDOR ☐ DESIGN

WBS ELEMENT: 40114.1.2 COUNTY Brunswick/New Hanover Alternate Q of 12 Alternate

T.I.P. No.: U-4738

DESCRIPTION OF PROJECT: ROADWAY EXTENDING FROM THE VICINITY OF US-17 BYPASS AND I-140 IN BRUNSWICK CO. TO US-421 IN NEW HANOVER CO., INCLUDING A CROSSING OF THE CAPPE FEAR RIVER

ESTIMATED DISPLACED					INCOME LEVEL					
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP	
Residential	5	19	24	4	0	0	6	11	7	
Businesses	35	8	43	4	VALUE OF DWELLING			DSS DWELLING AVAILABLE		
Farms	0	0	0	0	Owners		Tenants		For Sale	
Non-Profit	2	0	2	0	For Rent					
ANSWER ALL QUESTIONS					0-20M	0	\$ 0-150	0	0-20M	0
					20-40M	0	150-250	0	20-40M	37
Yes	No	Explain all "YES" answers.			40-70M	0	250-400	4	40-70M	129
<input type="checkbox"/>	<input checked="" type="checkbox"/>				70-100M	1	400-600	3	70-100M	320
<input checked="" type="checkbox"/>	<input type="checkbox"/>	100 UP	4	600 UP	12	100 UP	2543	600 UP	2135	
<input checked="" type="checkbox"/>	<input type="checkbox"/>				5		19		0	2639
<input checked="" type="checkbox"/>	<input type="checkbox"/>				REMARKS (Respond by Number)					
<input type="checkbox"/>	<input checked="" type="checkbox"/>				2. See Attached List of Businesses					
<input type="checkbox"/>	<input checked="" type="checkbox"/>				3. An ample supply of similar businesses will remain available.					
<input checked="" type="checkbox"/>	<input type="checkbox"/>				4. See Attached List of Businesses					
<input type="checkbox"/>	<input checked="" type="checkbox"/>				6. MLS, Newspapers, private real estate market, internet.					
<input checked="" type="checkbox"/>	<input type="checkbox"/>				8. As required by law.					
<input type="checkbox"/>	<input checked="" type="checkbox"/>				11. Nash County and Rocky Mount city public housing along with Section 8.					
<input type="checkbox"/>	<input checked="" type="checkbox"/>				12. DSS housing will be available or built if necessary.					
<input checked="" type="checkbox"/>	<input type="checkbox"/>				14. Same as #6 above.					
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Alternate Q EIS Supplement Business List

Parcel	Business	Size	# Employees
1	54 Nationl Gypsum	Large	50+
2	57 Ashley Furniture Warehouse	Small	3 to 10
3	68 No Name	Small	3 to 10
4	52 Industrial & Marine Fabrication & Welding	Small	3 to 10
5	58 De Mann Marine Power	Medium	15 to 25
6	61 Cape Fear Yacht Works	Medium	15 to 25
7	86 Forward in Christ Church	Medium	15 to 25
8	71 Good Samaritan Church	Medium	15 to 25
9	64 Goodness Gracie	Small	3 to 10
10	64 Kids in Tow Rentals	Small	3 to 10
11	64 Shore Line Distributors	Small	3 to 10
12	64 JUBA Erectors and Glass	Small	3 to 10
13	60 O.E. Durant Ship Chandler	Medium	15 to 25
14	72 VAC	Small	3 to 10
15	72 KARCO	Small	3 to 10
16	72 IMS	Small	3 to 10
17	72 Flaming Amy's	Small	3 to 10
18	72 No Name	Small	3 to 10
19	72 Coastal Lawn Service	Small	3 to 10
20	72 Seaside Silk Screening	Small	3 to 10
21	72 Island Appliance Repair	Small	3 to 10
22	139 Circle K	Small	3 to 10
23	133 Kelly Medical, Inc.	Small	3 to 10
24	138 No Name	Small	3 to 10
25	110 Affordable Collision	Small	3 to 10
26	103 Freedom Lawns	Small	3 to 10
27	102 Vacant	Small	3 to 10
28	100 Vacant	Small	3 to 10
29	117 Bon Appetit	Small	3 to 10
30	123 A Muse	Small	3 to 10
31	123 Allison Sales & Canvas	Small	3 to 10
32	123 Vacant	Small	3 to 10
33	123 Vacant	Small	3 to 10
34	123 Vacant	Small	3 to 10
35	123 Vacant	Small	3 to 10
36	123 Vacant	Small	3 to 10
37	153 Computer Repair & Sales	Small	3 to 10
38	160 Echoes of the Past Collectables	Small	3 to 10
39	158 Jimque Finds Resale Shop	Small	3 to 10
40	174 Jersey Mikes	Small	3 to 10
41	174 Uncle Kim's Kitchen	Small	3 to 10
42	174 Classy Nails	Small	3 to 10
43	174 Fantastic Sams	Small	3 to 10
44	174 Food Lion	Large	50+
45	146 Azalea Rehabilitation Center	Large	50+

EIS RELOCATION REPORT

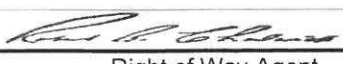

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

☒ E.I.S. ☐ CORRIDOR ☐ DESIGN

WBS ELEMENT: 40114.1.2		COUNTY: Brunswick/New Hanover		Alternate T of 12 Alternate	
T.I.P. No.: U-4738					
DESCRIPTION OF PROJECT:		ROADWAY EXTENDING FROM THE VICINITY OF US-17 BYPASS AND I-140 IN BRUNSWICK CO. TO US-421 IN NEW HANOVER CO., INCLUDING A CROSSING OF THE CAPPE FEAR RIVER			

ESTIMATED DISPLACED					INCOME LEVEL																																																																				
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP																																																																
Residential	66	102	168	14	0	70	41	57	0																																																																
Businesses	70	13	83	6	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="4">VALUE OF DWELLING</th> <th colspan="4">DSS DWELLING AVAILABLE</th> </tr> <tr> <th colspan="2">Owners</th> <th colspan="2">Tenants</th> <th colspan="2">For Sale</th> <th colspan="2">For Rent</th> </tr> <tr> <td>0-20M</td> <td>0</td> <td>\$ 0-150</td> <td>0</td> <td>0-20M</td> <td>0</td> <td>\$ 0-150</td> <td>0</td> </tr> <tr> <td>20-40M</td> <td>0</td> <td>150-250</td> <td>0</td> <td>20-40M</td> <td>37</td> <td>150-250</td> <td>0</td> </tr> <tr> <td>40-70M</td> <td>2</td> <td>250-400</td> <td>11</td> <td>40-70M</td> <td>129</td> <td>250-400</td> <td>78</td> </tr> <tr> <td>70-100M</td> <td>5</td> <td>400-600</td> <td>58</td> <td>70-100M</td> <td>320</td> <td>400-600</td> <td>426</td> </tr> <tr> <td>100 UP</td> <td>59</td> <td>600 UP</td> <td>33</td> <td>100 UP</td> <td>2543</td> <td>600 UP</td> <td>2135</td> </tr> <tr> <td></td> <td>66</td> <td></td> <td>102</td> <td></td> <td>3029</td> <td></td> <td>2639</td> </tr> </table>					VALUE OF DWELLING				DSS DWELLING AVAILABLE				Owners		Tenants		For Sale		For Rent		0-20M	0	\$ 0-150	0	0-20M	0	\$ 0-150	0	20-40M	0	150-250	0	20-40M	37	150-250	0	40-70M	2	250-400	11	40-70M	129	250-400	78	70-100M	5	400-600	58	70-100M	320	400-600	426	100 UP	59	600 UP	33	100 UP	2543	600 UP	2135		66		102		3029		2639
VALUE OF DWELLING				DSS DWELLING AVAILABLE																																																																					
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20-40M	0	150-250	0	20-40M	37	150-250	0																																																																		
40-70M	2	250-400	11	40-70M	129	250-400	78																																																																		
70-100M	5	400-600	58	70-100M	320	400-600	426																																																																		
100 UP	59	600 UP	33	100 UP	2543	600 UP	2135																																																																		
	66		102		3029		2639																																																																		
Farms	0	0	0	0																																																																					
Non-Profit	2	1	3	0																																																																					

ANSWER ALL QUESTIONS		
Yes	No	Explain all "YES" answers.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. Will special relocation services be necessary?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. Will schools or churches be affected by displacement?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. Will business services still be available after project?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. Will relocation cause a housing shortage?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	6. Source for available housing (list).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	7. Will additional housing programs be needed?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	8. Should Last Resort Housing be considered?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	9. Are there large, disabled, elderly, etc. families?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	10. Will public housing be needed for project?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	11. Is public housing available?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	12. Is it felt there will be adequate DSS housing housing available during relocation period?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	13. Will there be a problem of housing within financial means?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	14. Are suitable business sites available (list source).
		15. Number months estimated to complete RELOCATION? 24-48 months

 Right of Way Agent	7/26/17 Date	 Relocation Coordinator
8/28/17 Date		

	Parcel	Business	Size	# Employees
1	7	Circle K	Small	3 to 10
2	161	Lovitts Automotive	Small	3 to 10
3	166	WECT	Large	50+
4	183	No Name	Small	3 to 10
5	183	No Name	Small	3 to 10
6	183	No Name	Small	3 to 10
7	183	No Name	Small	3 to 10
8	189	No Name	Small	3 to 10
9	189	No Name	Small	3 to 10
10	189	No Name	Small	3 to 10
11	189	No Name	Small	3 to 10
12	248	Rite Aid	Medium	15 to 25
13	251	Shipyard Medical Center	Medium	15 to 25
14	251	Colortyme	Small	3 to 10
15	251	Harbor Freight	Medium	15 to 25
16	251	Roses	Medium	15 to 25
17	165	New York Forwarding Services	Small	3 to 10
18	165	Gulf American Line	Small	3 to 10
19	92	Carolina Marine Terminal	Medium	15 to 25
20	93	ARGOS Concrete Recycling	Medium	15 to 25
21	94	Petroleum Fuel Terminal	Medium	15 to 25
22	95	Chemserve Terminal of Wilmington	Medium	15 to 25
23	109	Ports Authority Stockyard	Small	3 to 10
24	139	Southeastern Machine & Welding Co. Inc.	Medium	15 to 25
25	173	Bowers Transmission Service	Small	3 to 10
26	225	Dollar General	Small	3 to 10
27	225	Dominos	Small	3 to 10
28	225	Ming Wak	Small	3 to 10
29	225	Electra Vapor	Small	3 to 10
30	243	Cape Fear Appliance Service	Small	3 to 10
31	245	Coastal Fuels	Small	3 to 10
32	252	Asian Buffet	Small	3 to 10
33	253	McDonalds	Medium	15 to 25
34	244	Hardees	Medium	15 to 25
35	246	KFC	Medium	15 to 25
36	264	Coastal Horizons	Medium	15 to 25
37	266	Coastal Horizons	Medium	15 to 25
38	272	Coastal Horizons	Medium	15 to 25
39	272	Chiropractic Center of Wilmington	Small	3 to 10
40	277	Cape Fear Center for Inquiry K-8 Charter School	Large	50+
41	254	State Farm	Small	3 to 10
42	257	Economy Signs	Small	3 to 10
43	259	ADDIS Construction	Small	3 to 10
44	262	Ken Baker Originals	Small	3 to 10
45	285	A Storage Place	Small	3 to 10
46	288	A Storage Place	Small	3 to 10

47	306	Masonic Codge	Medium	15 to 25
48	304	DFIT	Small	3 to 10
49	303	Health Care Business	Small	3 to 10
50	302	Port City Landscaping	Small	3 to 10
51	301	Atlantic Prosthetic Services	Small	3 to 10
52	300	Pink Hope	Small	3 to 10
53	298	Port City Carpet	Small	3 to 10
54	297	Sand Dollar Wellness Center	Small	3 to 10
55	296	No Name	Small	3 to 10
56	295	Hoffman & Hoffman	Small	3 to 10
57	294	Dish	Small	3 to 10
58	292	Taft, Taft & Haigler	Small	3 to 10
59	284	Subway	Small	3 to 10
60	284	MB Super Discount Cigarette Outlet	Small	3 to 10
61	284	Tienda El Mercadito	Small	3 to 10
62	284	Antojitos of Wilmington	Small	3 to 10
63	284	Nail Works	Small	3 to 10
64	284	Paola's Hair Salon & Barber Shop	Small	3 to 10
65	284	Boostmobile	Small	3 to 10
66	284	Bridal Elegance	Small	3 to 10
67	284	Oprah Beauty Supply	Small	3 to 10
68	284	Horison's Development, LLC	Small	3 to 10
69	284	Smith Properties, LLC	Small	3 to 10
70	284	Battle Lacrosse & Sports	Small	3 to 10
71	284	WEB Screen Printins	Small	3 to 10
72	284	Dulceria "OAX"	Small	3 to 10
73	284	Antesania "OAX"	Small	3 to 10
74	284	Complete Nutrition	Small	3 to 10
75	284	Bouelle Martial Arts	Small	3 to 10
76	284	Mom's Studios	Small	3 to 10
77	284	The Door	Small	3 to 10
78	284	City of Wilmington Employee Health Services	Small	3 to 10
79	281	Family Dollar	Medium	15 to 25
80	268	Vacant	Small	3 to 10
81	263	Yucca Treatment Spa	Small	3 to 10
82	263	Vacant	Small	3 to 10
83	255	CVS	Medium	15 to 25
84	258	Modern Dry Cleaners	Small	3 to 10
85	269	Coastal Carolina Car Wash	Small	3 to 10
86	273	A-1 Safe & Lock	Small	3 to 10

EIS RELOCATION REPORT



North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

☒ E.I.S. ☐ CORRIDOR ☐ DESIGN

WBS ELEMENT:		COUNTY		New Hanover		Alternate T of 6 Alternate			
T.I.P. No.:		U-4738							
DESCRIPTION OF PROJECT:		Roadway extending from the vicinity of US 17 Bypass and I-140 in Brunswick Co. to US 421 in New Hanover Co., including a crossing of the Cape Fear River.							
ESTIMATED DISPLACEES				INCOME LEVEL					
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP
Residential	2	3	5	1	0	0	2	3	0
Businesses	2	3	5	2	VALUE OF DWELLING		DSS DWELLING AVAILABLE		
Farms	0	0	0	0	Owners		Tenants		For Sale
Non-Profit	0	0	0	0	For Rent				
ANSWER ALL QUESTIONS									
Yes	No	Explain all "YES" answers.							
x		1. Will special relocation services be necessary?			0-20M 0 \$ 0-150 2 0-20M 0 \$ 0-150 0				
x		2. Will schools or churches be affected by displacement?			20-40M 0 150-250 1 20-40M 0 150-250 0				
x		3. Will business services still be available after project?			40-70M 0 250-400 0 40-70M 5 250-400 0				
x		4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.			70-100M 0 400-600 0 70-100M 11 400-600 3				
	x	5. Will relocation cause a housing shortage?			100 UP 2 600 UP 0 100 UP 310 600 UP 213				
See Remarks		6. Source for available housing (list).			TOTAL 2 3 326 216				
	x	7. Will additional housing programs be needed?			REMARKS (Respond by number)				
x		8. Should Last Resort Housing be considered?			*Income level and dwelling value were measured in thousands.				
	x	9. Are there large, disabled, elderly, etc. families?			1) There are several potentially complex relocations identified within the limits of Alternative T (Alt T)				
	x	10. Will public housing be needed for the project?			- Carolina Marine Terminal will require the relocation of				
x		11. Is public housing available?			a rather large volume of aggregate material as well as the moving of heavy industrial equipment. A complex move as such will entail a lengthy process, high relocation expenses, and heavy monitoring.				
x		12. Is it felt there will be adequate DSS housing available during relocation period?			Above normal costs may come in the form of relocation claims for actual direct loss of tangible personal property as well as substitute personal property due to the complex nature of moving aggregate materials and heavy industrial machinery.				
x		13. Will there be a problem of housing within financial means?			- Petroleum Fuel Company will entail a similar level of complexity, time, and relocation expenses as stated above for Carolina Marine Terminal				
x		14. Are suitable business sites available (list source).			Scooter's Skating Center is also impacted Alt T. Locating a replacement site that can accommodate a very particular business such as a skating rink may prove time consuming and costly.				
		15. Number months estimated to complete RELOCATION?			2) A church (Long Leaf Church) will be impacted by Alt T.				
		18 - 24 Months			3) There are several unimpacted businesses within Alt T that will remain functional after the project.				
					4) There are 5 businesses that will be impacted by the project. Please see below for entire list.				
					6) MLS, Internet, Housing Authority, Apartment Listings, Newspaper, For Sale By Owner - After researching the area, more than 50 residential listings were discovered as replacement options for owners and tenants impacted by the project.				

- 8) The area impacted by the Alt T consists of majority low-income housing. Review of the area revealed that there is available housing, however; due to rising home prices, scarce inventory for low income housing, and assumed lower levels of income, finding comparable housing within the displacee's financial means may be challenging. Last resort housing in the form of supplemental payments as well as rental assistance payments must be considered given the market's current conditions.
- 11) There is public housing available, however; it is not expected to be necessary for this project.
- 12) Review of the area revealed that there is adequate DSS housing available (more than 50 listings) but securing a replacement dwelling will require additional assistance as explained above in item no. 8.
- 13) See explanation under item number 8. The impacted area is a low-income neighborhood. Locating housing within the displacee's financial means will most likely necessitate the use of supplemental payments and rental assistance payments to secure comparable replacement dwellings.
- 14) There are available business sites within the project limits. Resources used are: LoopNet, MLS, Internet, and Newspaper (Located more than 50 listings for office, retail, and industrial space)
- Business Locations By parcel, name, size, & number of employees

Parcel # ROW Comparis on Map	Business	Size	Bus.Type	# Employees
92	Carolina Marine Terminal	Medium	Industrial - Marine Bulk Cargo Handling	15 to 25
94	Petroleum Fuel Terminal	Medium	Industrial - Petroleum Storage and Distribution	15 to 25
161	Lovitt's Automotive	Small	Retail	3 to 10
188	Scooter's Skating Center	Medium	Entertainment	15 to 25
281	Family Dollar	Medium	Medium	15 to 25

 Right of Way Agent	01-24-19 Date		 Relocation Coordinator	01/25/2019 Date
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FRM15-E

EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

☒ E.I.S. ☐ CORRIDOR ☐ DESIGN

WBS ELEMENT:		40114.1.2		COUNTY	Brunswick/New Hanover		Alternate		MA		of		12		Alternate	
T.I.P. No.:		U-4738														
DESCRIPTION OF PROJECT:		ROADWAY EXTENDING FROM THE VICINITY OF US-17 BYPASS AND I-140 IN BRUNSWICK CO. TO US-421 IN NEW HANOVER CO., INCLUDING A CROSSING OF THE CAPPE FEAR RIVER														

ESTIMATED DISPLACEES					INCOME LEVEL								
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP				
Residential	33	13	46	8	0	0	5	15	26				
Businesses	32	9	41	0	VALUE OF DWELLING				DSS DWELLING AVAILABLE				
Farms	0	0	0	0	Owners		Tenants		For Sale		For Rent		
Non-Profit	2	0	2	0	0-20M	0	\$ 0-150	0	0-20M	0	\$ 0-150	0	
					20-40M	0	150-250	0	20-40M	37	150-250	0	
					40-70M	1	250-400	5	40-70M	129	250-400	78	
					70-100M	8	400-600	1	70-100M	320	400-600	426	
					100 UP	24	600 UP	7	100 UP	2543	600 UP	2135	
						33		13		3029		2639	

ANSWER ALL QUESTIONS		
Yes	No	Explain all "YES" answers.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. Will special relocation services be necessary?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. Will schools or churches be affected by displacement?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. Will business services still be available after project?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. Will relocation cause a housing shortage?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	6. Source for available housing (list).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	7. Will additional housing programs be needed?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	8. Should Last Resort Housing be considered?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	9. Are there large, disabled, elderly, etc. families?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	10. Will public housing be needed for project?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	11. Is public housing available?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	12. Is it felt there will be adequate DSS housing housing available during relocation period?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	13. Will there be a problem of housing within financial means?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	14. Are suitable business sites available (list source).
		15. Number months estimated to complete RELOCATION? 24-48 months

REMARKS (Respond by number)

2. See attached Supplemental List of Businesses

3. An ample supply of similar businesses will remain available.

4. See Attached List of Businesses

6. MLS, Newspapers, private real estate market, internet.

8. As required by law.

11. Nash County and Rocky Mount city public housing along with Section 8.

12. DSS housing will be available or built if necessary.

14. Same as #6 above.

	7/26/17	Date		8/1/17
Right of Way Agent			Relocation Coordinator	Date

Alternate MA EIS Supplemental Business List

Parcel	Business	Size	# Employees
100	Nationl Gypsum	Large	50+
103	Ashley Furniture Warehouse	Small	3 to 10
114	No Name	Small	3 to 10
98	Industrial & Marine Fabrication & Welding	Small	3 to 10
104	De Mann Marine Power	Medium	15 to 25
117	Good Samaritan Church	Small	30 to 50
110	Goodness Gracie	Small	3 to 10
110	Kids in Tow Rentals, LLC	Small	3 to 10
110	Shore Line Distributors, LLC	Small	3 to 10
110	JUBA Erectors and Glass	Small	3 to 10
106	O.E. Durant Ship Chandler	Small	3 to 10
118	VAC	Small	3 to 10
118	KARCO	Small	3 to 10
118	IMS	Small	3 to 10
118	Flaming Amy's	Small	3 to 10
118	No Name	Small	3 to 10
118	Coastal Lawn Service	Small	3 to 10
118	Seaside Silk Screening	Small	3 to 10
118	Island Appliance Repair	Small	3 to 10
130	Forward in Christ Church	Small	3 to 10
195	Computer Repair & Sales	Small	3 to 10
202	Echoes of the Past Collectables	Medium	15 to 25
200	Jimque Finds Resale Shop	Small	3 to 10
216	Jersey Mikes	Small	3 to 10
216	Uncle Kim's Kitchen	Small	3 to 10
216	Classy Nails	Small	3 to 10
216	Fantastic Sam's	Small	3 to 10
216	Food Lion	Large	50+
181	Circle K	Medium	15 to 25
188	Azalea Rehabilitation Center	Large	50+
175	Kelly Medical, Inc.	Small	3 to 10
180	No Name	Small	3 to 10
165	A Muse	Small	3 to 10
165	Allison Sales & Canvas	Small	3 to 10
165	Vacant	Small	3 to 10
165	Vacant	Small	3 to 10
165	Vacant	Small	3 to 10
165	Vacant	Small	3 to 10
165	Vacant	Small	3 to 10
159	Bon Appetit	Small	3 to 10
152	Affordable Collision	Small	3 to 10
145	Freedom Lawns	Small	3 to 10
144	Vacant	Small	3 to 10

EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

☒ E.I.S. ☐ CORRIDOR ☐ DESIGN

WBS ELEMENT:		COUNTY		New Hanover		Alternate		MA		of		6		Alternate	
T.I.P. No.:		U-4738													
DESCRIPTION OF PROJECT:		Roadway extending from the vicinity of US 17 Bypass and I-140 in Brunswick Co. to US 421 in New Hanover Co., including a crossing of the Cape Fear River.													
ESTIMATED DISPLACEES								INCOME LEVEL							
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP						
Residential	0	2	2	1	0	0	1	1	0						
Businesses	2	0	2	0	VALUE OF DWELLING				DSS DWELLING AVAILABLE						
Farms	0	0	0	0	Owners		Tenants		For Sale		For Rent				
Non-Profit	0	0	0	0	0-20M	0	\$ 0-150	1	0-20M	0	\$ 0-150	0			
					20-40M	0	150-250	1	20-40M	0	150-250	0			
					40-70M	0	250-400	0	40-70M	5	250-400	0			
					70-100M	0	400-600	0	70-100M	11	400-600	3			
					100 UP	0	600 UP	0	100 UP	310	600 UP	213			
					TOTAL	0		2		326		216			
ANSWER ALL QUESTIONS															
Yes	No	Explain all "YES" answers.													
x		1. Will special relocation services be necessary?													
x		2. Will schools or churches be affected by displacement?													
x		3. Will business services still be available after project?													
x		4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.													
	x	5. Will relocation cause a housing shortage?													
See Remarks		6. Source for available housing (list).													
	x	7. Will additional housing programs be needed?													
x		8. Should Last Resort Housing be considered?													
	x	9. Are there large, disabled, elderly, etc. families?													
	x	10. Will public housing be needed for the project?													
x		11. Is public housing available?													
x		12. Is it felt there will be adequate DSS housing available during relocation period?													
x		13. Will there be a problem of housing within financial means?													
x		14. Are suitable business sites available (list source).													
		15. Number months estimated to complete													
REMARKS (Respond by number)															
*Income level and dwelling value were measured in thousands.															
1) There are several potentially complex relocations identified within the limits of Alternative MA (Alt MA). - National Gypsum a large-scale interior finishing product (one of the largest gypsum board producers in world), will require the relocation of heavy industrial machinery along with a large inventory of interior finishing products. Actual direct loss of tangible personal property as well as substitute personal property claims should be expected inflating relocation expenses being that moving heavy industrial type equipment may not prove to be feasible. Due to the sheer size of the operation, this relocation will entail a potentially lengthy process, above average expenses, and will require heavy monitoring.															
2) A church (Intertek Good Samaritan Church) will be impacted by Alt MA.															
3) There are several unimpacted businesses within Alt MA that will remain functional after the project.															
4) There are 2 businesses that will be impacted by the project. Please see below for entire list.															
6) MLS, Internet, Housing Authority, Apartment Listings, Newspaper, For Sale By Owner – After researching the area, more than 50 residential listings were discovered as replacement options for owners and tenants impacted by the project.															
8) The area impacted by the Alt MA consists of majority low income housing. Review of the area revealed that there is available housing, however; due to rising home prices, scarce inventory for low income housing, and assumed lower income levels, finding comparable housing															

RELOCATION?

18 – 24 months

within the displacee's financial means may be challenging. Last resort housing in the form of supplemental payments as well as rental assistance payments must be considered given the market's current conditions.

11) There is public housing available, however; it is not expected to be necessary for this project.

12) Review of the area revealed that there is adequate DSS housing available (more than 50 listings) but securing a replacement dwelling will require additional assistance as explained above in item no. 8.

13) See explanation under item number 8. The impacted area is a low-income neighborhood. Locating housing within the displacee's financial means will most likely necessitate the use of supplemental payments and rental assistance payments to secure comparable replacement dwellings.

14) There are available business sites within the project limits. Resources used are: LoopNet, MLS, Internet, and Newspaper (Located more than 50 listings for office, retail, and industrial space)

Business Locations By parcel, name, size, & number of employees

Parcel # ROW Comparis on Map	Business	Size	Bus.Type	# Employees
100	National Gypsum	Large	Industrial – Gypsum Board Producer, Interior Finishing Products	50+
122	Earl Chambers Wrecker Service	Small	LI – Automotive Service	3 to 10



01-24-19

Right of Way Agent

Date



Relocation Coordinator

01/25/2019

Date

FRM15-E

EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

☒ E.I.S. ☐ CORRIDOR ☐ DESIGN

WBS ELEMENT: 40114.1.2 COUNTY Brunswick/New Hanover Alternate NA of 12 Alternate

T.I.P. No.: U-4738

DESCRIPTION OF PROJECT: ROADWAY EXTENDING FROM THE VICINITY OF US-17 BYPASS AND I-140 IN BRUNSWICK CO. TO US-421 IN NEW HANOVER CO., INCLUDING A CROSSING OF THE CAPPE FEAR RIVER

ESTIMATED DISPLACED					INCOME LEVEL				
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP
Residential	51	92	143	32	0	0	77	27	39
Businesses	61	20	81	7	VALUE OF DWELLING		DSS DWELLING AVAILABLE		
Farms	0	0	0	0	Owners		Tenants		For Sale
Non-Profit	2	1	3	0	0-20M		\$ 0-150		For Rent
					20-40M		150-250		
					40-70M		250-400		
					70-100M		400-600		
					100 UP		600 UP		
					51		92		
							3029		
							2639		

ANSWER ALL QUESTIONS		Explain all "YES" answers.
Yes	No	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. Will special relocation services be necessary?
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2. Will schools or churches be affected by displacement?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. Will business services still be available after project?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. Will relocation cause a housing shortage?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	6. Source for available housing (list).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	7. Will additional housing programs be needed?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	8. Should Last Resort Housing be considered?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	9. Are there large, disabled, elderly, etc. families?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	10. Will public housing be needed for project?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	11. Is public housing available?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	12. Is it felt there will be adequate DSS housing housing available during relocation period?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	13. Will there be a problem of housing within financial means?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	14. Are suitable business sites available (list source).
		15. Number months estimated to complete RELOCATION? 24-48 months

VALUE OF DWELLING		DSS DWELLING AVAILABLE	
Owners	Tenants	For Sale	For Rent
0-20M	0	0-20M	0
20-40M	0	20-40M	37
40-70M	2	40-70M	129
70-100M	10	70-100M	320
100 UP	39	100 UP	2543
	51		2639

REMARKS (Respond by Number)

2. See Attached List of Businesses

3. An ample supply of similar businesses will remain available.

4. See Attached List of Businesses



6. MLS, Newspapers, private real estate market, internet.

8. As required by law.

11. Nash County and Rocky Mount city public housing along with Section 8.

12. DSS housing will be available or built if necessary.

14. Same as #6 above.

	7/26/17		8/28/17
Right of Way Agent	Date	Relocation Coordinator	Date

	Parcel	Business	Size	# Employees
1	94	Carolina Marine Terminal	Medium	15 to 25
2	95	ARGOS Concrete Recycling	Medium	15 to 25
3	96	Petroleum Fuel Terminal	Medium	15 to 25
4	97	Chemserve Terminal of Wilmington, LLC	Medium	15 to 25
5	111	Ports Authority Stockyard	Small	3 to 10
6	141	Southeastern Machine & Welding Co. Inc.	Medium	15 to 25
7	163	Lovitt's Automotive	Small	3 to 10
8	168	WECT	Large	50+
9	167	New York Forwarding Services	Medium	15 to 25
10	167	Gulf American Line	Medium	15 to 25
11	169	Bowers Transmission Service	Small	3 to 10
12	185	No Name	Small	3 to 10
13	185	No Name	Small	3 to 10
14	185	No Name	Small	3 to 10
15	185	No Name	Small	3 to 10
16	191	No Name	Small	3 to 10
17	191	No Name	Small	3 to 10
18	191	No Name	Small	3 to 10
19	191	No Name	Small	3 to 10
20	250	Rite Aid	Medium	15 to 25
21	253	Shipyards Medical Center	Small	3 to 10
22	253	Colortyme	Small	3 to 10
23	253	Harbor Freight Tools	Medium	15 to 25
24	253	Roses	Large	50+
25	227	Dollar General	Small	3 to 10
26	227	Ming Wak	Small	3 to 10
27	227	Dominos	Small	3 to 10
28	227	Electra Vapor	Small	3 to 10
29	246	Hardees	Medium	15 to 25
30	248	KFC	Medium	15 to 25
31	245	Cape Fear Appliance Service	Small	3 to 10
32	247	Coastal Fuels	Small	3 to 10
33	254	Asian Buffet	Small	3 to 10
34	255	McDonalds	Medium	15 to 25
35	266	Coastal Horizons	Large	50+
36	279	Cape Fear Center for Inquiry K-8 Charter School	Large	50+
37	268	Coastal Horizons	Large	50+
38	274	Coastal Horizons Center	Large	50+
39	274	Chiropractic Center of Wilmington	Small	3 to 10
40	287	A Storage Place	Small	3 to 10
41	286	Subway	Small	3 to 10
42	286	MB Super Discount Cigarette Outlet	Small	3 to 10
43	286	Tienda El Mercadito	Small	3 to 10
44	286	Antojitos of Wilmington	Small	3 to 10
45	286	Nail Works	Small	3 to 10
46	286	Paola's Hair Salon & Barber Shop	Small	3 to 10
47	286	Boostmobile	Small	3 to 10

48	286	Bridal Elegance	Small	3 to 10
49	286	Oprah Beauty Supply	Small	3 to 10
50	286	Horison's Development, LLC	Small	3 to 10
51	286	Smith Properties, LLC	Small	3 to 10
52	286	Battle Lacrosse & Sports	Small	3 to 10
53	286	WEB Screen Printing	Small	3 to 10
54	286	Dulceria "OAX"	Small	3 to 10
55	286	Artesanias "OAX"	Small	3 to 10
56	286	Complete Nutrition	Small	3 to 10
57	286	Bouelle Martial Arts	Small	3 to 10
58	286	Mom's Studios	Small	3 to 10
59	286	The Door	Small	3 to 10
60	286	City of Wilmington Employee Health Services	Small	3 to 10
61	270	Vacant	Small	3 to 10
62	265	Yucca Treatment Spa	Small	3 to 10
63	265	Vacant	Small	3 to 10
64	290	A Storage Place	Small	3 to 10
65	294	Taft, Taft & Haigler	Small	3 to 10
66	296	Dish	Small	3 to 10
67	297	Hoffman & Hoffman	Small	3 to 10
68	298	No Name	Small	3 to 10
69	299	Sand Dollar Wellness Center	Small	3 to 10
70	300	Port City Carpet	Small	3 to 10
71	302	Pink Hope	Small	3 to 10
72	303	Atlantic Prosthetic Services	Small	3 to 10
73	304	Port City Land Surveying	Small	3 to 10
74	305	Health Care Business	Small	3 to 10
75	306	DFIT Personal Training	Small	3 to 10
76	308	Masonic Lodge	Small	3 to 10
77	257	CVS	Medium	15 to 25
78	260	Modern Dry Cleaners	Small	3 to 10
79	271	Coastal Carolina Car Wash	Small	3 to 10
80	275	A-1 Safe & Lock	Small	3 to 10
81	256	State Farm	Small	3 to 10
82	259	Economy Signs	Small	3 to 10
83	261	Addis Construction	Small	3 to 10
84	264	Ken Baker Originals	Small	3 to 10

EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

☒ E.I.S. ☐ CORRIDOR ☐ DESIGN

WBS ELEMENT:		COUNTY		New Hanover		Alternate		NA		of		6		Alternate	
T.I.P. No.:		U-4738													
DESCRIPTION OF PROJECT:		Roadway extending from the vicinity of US 17 Bypass and I-140 in Brunswick Co. to US 421 in New Hanover Co., including a crossing of the Cape Fear River.													
ESTIMATED DISPLACEDS										INCOME LEVEL					
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP						
Residential	2	3	5	1	0	0	2	3	0						
Businesses	2	3	5	2	VALUE OF DWELLING				DSS DWELLING AVAILABLE						
Farms	0	0	0	0	Owners		Tenants		For Sale		For Rent				
Non-Profit	0	0	0	0	0-20M	0	\$ 0-150	3	0-20M	0	\$ 0-150	0			
					20-40M	0	150-250	0	20-40M	0	150-250	0			
					40-70M	0	250-400	0	40-70M	5	250-400	0			
					70-100M	0	400-600	0	70-100M	11	400-600	3			
					100 UP	2	600 UP	0	100 UP	310	600 UP	213			
					TOTAL	2		3		326		216			
ANSWER ALL QUESTIONS													REMARKS (Respond by Number)		
Yes	No	<i>Explain all "YES" answers.</i>											<p>*Income level and dwelling value were measured in thousands.</p> <p>1) There are several potentially complex relocations identified within the limits of Alternative NA (Alt NA)</p> <ul style="list-style-type: none"> - Carolina Marine Terminal will require the relocation of a rather large volume of aggregate material as well as the moving of heavy industrial equipment. A complex move as such will entail a lengthy process, high relocation expenses, and heavy monitoring. Above normal costs may come in the form of relocation claims for actual direct loss of tangible personal property as well as substitute personal property due to the complex nature of moving aggregate materials and heavy industrial machinery. - Petroleum Fuel Company will entail a similar level of complexity, time, and relocation expenses as stated above for Carolina Marine Terminal <p>Scooter's Skating Center is also impacted Alt NA. Locating a replacement site that can accommodate a very particular business such as a skating rink may prove time consuming and costly.</p> <p>2) A church (Long Leaf Church) will be impacted by Alt NA.</p> <p>3) There are several unimpacted businesses within Alt NA that will remain functional after the project.</p> <p>4) There are 5 businesses that will be impacted by the project. Please see below for entire list.</p> <p>6) MLS, Internet, Housing Authority, Apartment Listings, Newspaper, For Sale By Owner – After review of the local market, more than 50 residential listings were discovered as replacement options for owners and tenants impacted by the project.</p>		
x		1. Will special relocation services be necessary?													
x		2. Will schools or churches be affected by displacement?													
x		3. Will business services still be available after project?													
x		4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.													
	x	5. Will relocation cause a housing shortage?													
See Remarks		6. Source for available housing (list).													
	x	7. Will additional housing programs be needed?													
x		8. Should Last Resort Housing be considered?													
	x	9. Are there large, disabled, elderly, etc. families?													
	x	10. Will public housing be needed for project?													
x		11. Is public housing available?													
x		12. Is it felt there will be adequate DSS housing housing available during relocation period?													
x		13. Will there be a problem of housing within financial means?													
x		14. Are suitable business sites available (list source).													
		15. Number months estimated to complete RELOCATION? 18 – 24 Months													

8) The area impacted by the Alt NA consists of majority low income housing. Review of the area revealed that there is available housing, however; due to rising home prices, scarce inventory for low income housing, and assumed lower levels of income, finding comparable housing within the displacee's financial means may be challenging. Last resort housing in the form of supplemental payments and rental assistance payments must be considered given the market's current conditions.

11) There is public housing available, however; it is not expected to be necessary for this project.

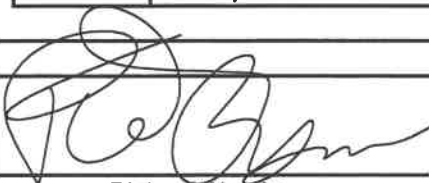

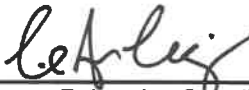
12) Review of the area revealed that there is adequate DSS housing available (more than 50 listings) but securing a replacement dwelling will require additional assistance as explained above in item no. 8.

13) See explanation under item number 8. The impacted area is a low-income neighborhood. Locating housing within the displacee's financial means will most likely necessitate the use of supplemental payments and rental assistance payments to secure comparable replacement dwellings.

14) There are available business sites within the project limits. Resources used are: LoopNet, MLS, Internet, and Newspaper (Located more than 50 listings for office, retail, and industrial space)

Business Locations By parcel, name, size, & number of employees

Parcel # ROW Comparis on Map	Business	Size	Bus.Type	# Employees
94	Carolina Marine Terminal	Medium	Industrial - Marine Bulk Cargo Handling	15 to 25
96	Petroleum Fuel Terminal	Medium	Industrial - Petroleum Storage and Distribution	15 to 25
151	Scooter's Skating Center	Medium	Entertainment	15 to 25
163	Lovitt's Automotive	Small	LT - Automotive Service	3 to 10
286	Family Dollar	Medium	Retail	15 to 25

	01-23-19			01/25/2019
Right of Way Agent	Date		Relocation Coordinator	Date

FRM15-E

EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

☒ E.I.S. ☐ CORRIDOR ☐ DESIGN

WBS ELEMENT: 40114.1.2 COUNTY Brunswick/New Hanover Alternate VA of 12 Alternate

T.I.P. No.: U-4738

DESCRIPTION OF PROJECT: ROADWAY EXTENDING FROM THE VICINITY OF US-17 BYPASS AND I-140 IN BRUNSWICK CO. TO US-421 IN NEW HANOVER CO., INCLUDING A CROSSING OF THE CAPPE FEAR RIVER

ESTIMATED DISPLACED					INCOME LEVEL				
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP
Residential	62	101	163	22	0	0	90	21	52
Businesses	61	18	79	6	VALUE OF DWELLING		DSS DWELLING AVAILABLE		
Farms	0	0	0	0	Owners		Tenants		For Sale For Rent
Non-Profit	2	1	3	1	0-20M	0	\$ 0-150	0	0-20M 0 \$ 0-150 0

ANSWER ALL QUESTIONS							
Yes	No	Explain all "YES" answers.		20-40M	0	150-250	0
<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. Will special relocation services be necessary?		40-70M	1	250-400	0
<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. Will schools or churches be affected by displacement?		70-100M	13	400-600	91
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. Will business services still be available after project?		100 UP	48	600 UP	10
<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.			62		101
<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. Will relocation cause a housing shortage?					3029
<input type="checkbox"/>	<input checked="" type="checkbox"/>	6. Source for available housing (list).					2639
<input type="checkbox"/>	<input checked="" type="checkbox"/>	7. Will additional housing programs be needed?					
<input checked="" type="checkbox"/>	<input type="checkbox"/>	8. Should Last Resort Housing be considered?					
<input type="checkbox"/>	<input checked="" type="checkbox"/>	9. Are there large, disabled, elderly, etc. families?					
<input type="checkbox"/>	<input checked="" type="checkbox"/>	10. Will public housing be needed for project?					
<input checked="" type="checkbox"/>	<input type="checkbox"/>	11. Is public housing available?					
<input checked="" type="checkbox"/>	<input type="checkbox"/>	12. Is it felt there will be adequate DSS housing housing available during relocation period?					
<input type="checkbox"/>	<input checked="" type="checkbox"/>	13. Will there be a problem of housing within financial means?					
<input checked="" type="checkbox"/>	<input type="checkbox"/>	14. Are suitable business sites available (list source).					
		15. Number months estimated to complete RELOCATION?					

24-48 months

REMARKS (Respond by Number)

- See Attached List of Businesses
- An ample supply of similar businesses will remain available.
- See Attached List of Businesses
- MLS, Newspapers, private real estate market, internet.
- As required by law.
- Nash County and Rocky Mount city public housing along with Section 8.
- DSS housing will be available or built if necessary.
- Same as #6 above.

Right of Way Agent Date 7/26/17 Relocation Coordinator Date 8/8/17

	Parcel	Business	Size	# Employees
1	8	Circle K	Small	3 to 10
2	30	Willoughby's	Small	3 to 10
3	39	Cook Periodontics & Dental Implants	Medium	15 to 25
4	41	Dr. Jonathan Ludwig	Small	3 to 10
5	44	MyEyeDoctor	Small	3 to 10
6	78	Capeside Animal Hospital	Small	3 to 10
7	78	Vacant	Small	3 to 10
8	78	Capeside Cat Care	Small	3 to 10
9	78	Orbie & Co. Jewelry & Trade	Small	3 to 10
10	78	D'Vin Salon	Small	3 to 10
11	78	Port City Java	Small	3 to 10
12	112	Kaylis	Small	3 to 10
13	112	Tony Harker's Automotive	Small	3 to 10
14	116	Insulation Systems Inc.	Small	3 to 10
15	116	WorldParts	Small	3 to 10
16	116	Decorative Concrete Solutions	Small	3 to 10
17	122	No Name	Small	3 to 10
18	127	Roy's Carburetor Tune-Up Service	Small	3 to 10
19	133	Church of St. Peter the Fisherman	Small	20 to 80
20	137	Reynolds Body & Paint Shop	Small	3 to 10
21	139	Performance Cycles	Small	3 to 10
22	140	Han Dee Hugho's	Small	3 to 10
23	144	Dubliner Irish Pub	Small	3 to 10
24	145	J.T. Lee & Sons	Medium	15 to 25
25	149	Certified Electronics	Small	3 to 10
26	150	Sturdy Controls	Large	50+
27	158	Cape Fear Builder Sales	Small	3 to 10
28	160	AMG Motor Sports	Small	3 to 10
29	165	Vacant	Small	3 to 10
30	175	Vacant	Small	
31	175	New Life Christian Church	Small	35 to 50
32	184	Kenny Lovitts Auto Sales	Small	3 to 10
33	190	No Name	Small	3 to 10
34	190	No Name	Small	3 to 10
35	190	No Name	Small	3 to 10
36	192	Jennings & Associates	Small	3 to 10
37	193	Sunset Park Food Mart	Small	3 to 10
38	194	Vacant	Small	3 to 10
39	196	Kenny Lovitts Auto Sales	Small	3 to 10
40	198	Vacant	Small	3 to 10
41	199	Sunset Park Barber Shop	Small	3 to 10
42	207	Kenny Lovitts Auto Sales	Small	3 to 10
43	212	Reese Chiropractic	Medium	15 to 25
44	214	Lucille Shuffler Bldg.	Small	3 to 10
45	220	Culligan Water Conditioning	Medium	15 to 25
46	223	Port City Taxi	Small	3 to 10
47	230	The Lord's Church	Small	30-40

48	231	Auto, Lube & Tune	Small	3 to 10
49	235	Seashore Discount Drugs	Small	3 to 10
50	238	Furniture Store	Small	3 to 10
51	239	Cape Fear Generators	Small	3 to 10
52	242	Vacant	Small	3 to 10
53	243	Fu Wangz	Small	3 to 10
54	245	Ezzelle's Breakfast House	Small	3 to 10
55	245	Vacant	Small	3 to 10
56	245	Vacant	Small	3 to 10
57	254	Jamaica House	Small	3 to 10
58	255	Floyd's Used Furniture	Small	3 to 10
59	255	Betty B's Antiques	Small	3 to 10
60	257	NAPA Auto parts	Small	3 to 10
61	259	Extreme Tire	Small	3 to 10
62	262	Affordable Auto Service	Small	3 to 10
63	266	Affordable Dentures	Small	3 to 10
64	268	Aaron's Custom Exhaust	Small	3 to 10
65	269	Merritt's Burger House	Small	3 to 10
66	271	Gene's Tire Service	Small	3 to 10
67	272	Auto Zone	Small	3 to 10
68	273	E.E. Benton's Tax Service	Small	3 to 10
69	274	N.C. Inspection Center	Small	3 to 10
70	274	Port City Augo	Small	3 to 10
71	274	All About Transmissions	Small	3 to 10
72	279	Kenny Lovitts Auto Sales	Small	3 to 10
73	296	Cape Fear Appliance Service	Small	3 to 10
74	297	Hardees	Medium	15 to 25
75	298	Coastal Fuels	Small	3 to 10
76	300	KFC	Medium	15 to 25
77	301	Asian Buffett	Small	3 to 10
78	303	McDonalds	Medium	15 to 25
79	304	CVS	Medium	15 to 25
80	307	Modern Dry Cleaners	Small	3 to 10
81	316	Coastal Carolina Car Wash	Small	3 to 10
82	318	A-1 Safe & Lock	Small	3 to 10

EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

☒ E.I.S. ☐ CORRIDOR ☐ DESIGN

WBS ELEMENT:		COUNTY	New Hanover	Alternate VA of 6 Alternate
T.I.P. No.:	U-4738			
DESCRIPTION OF PROJECT:	Roadway extending from the vicinity of US 17 Bypass and I-140 in Brunswick Co. to US 421 in New Hanover Co., including a crossing of the Cape Fear River.			

ESTIMATED DISPLACED					INCOME LEVEL																																																										
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP																																																						
Residential	2	3	5	2	0	0	2	3	0																																																						
Businesses	10	9	19	2	VALUE OF DWELLING				DSS DWELLING AVAILABLE																																																						
Farms	0	0	0	0	Owners		Tenants		For Sale		For Rent																																																				
Non-Profit	0	0	0	0	0-20M	0	\$ 0-150	0	0-20M	0	\$ 0-150	0																																																			
ANSWER ALL QUESTIONS <table border="1"> <thead> <tr> <th>Yes</th> <th>No</th> <th>Explain all "YES" answers.</th> </tr> </thead> <tbody> <tr> <td></td> <td>x</td> <td>1. Will special relocation services be necessary?</td> </tr> <tr> <td></td> <td>x</td> <td>2. Will schools or churches be affected by displacement?</td> </tr> <tr> <td>x</td> <td></td> <td>3. Will business services still be available after project?</td> </tr> <tr> <td>x</td> <td></td> <td>4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.</td> </tr> <tr> <td></td> <td>x</td> <td>5. Will relocation cause a housing shortage?</td> </tr> <tr> <td colspan="2">See Remarks</td> <td>6. Source for available housing (list).</td> </tr> <tr> <td></td> <td>x</td> <td>7. Will additional housing programs be needed?</td> </tr> <tr> <td>x</td> <td></td> <td>8. Should Last Resort Housing be considered?</td> </tr> <tr> <td></td> <td>x</td> <td>9. Are there large, disabled, elderly, etc. families?</td> </tr> <tr> <td></td> <td>x</td> <td>10. Will public housing be needed for the project?</td> </tr> <tr> <td>x</td> <td></td> <td>11. Is public housing available?</td> </tr> <tr> <td>x</td> <td></td> <td>12. Is it felt there will be adequate DSS housing housing available during relocation period?</td> </tr> <tr> <td>x</td> <td></td> <td>13. Will there be a problem of housing within financial means?</td> </tr> <tr> <td>x</td> <td></td> <td>14. Are suitable business sites available (list source).</td> </tr> <tr> <td colspan="2"></td> <td>15. Number months estimated to complete RELOCATION?</td> </tr> <tr> <td colspan="2"></td> <td>18 - 24 Months</td> </tr> </tbody> </table>					Yes	No	Explain all "YES" answers.		x	1. Will special relocation services be necessary?		x	2. Will schools or churches be affected by displacement?	x		3. Will business services still be available after project?	x		4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.		x	5. Will relocation cause a housing shortage?	See Remarks		6. Source for available housing (list).		x	7. Will additional housing programs be needed?	x		8. Should Last Resort Housing be considered?		x	9. Are there large, disabled, elderly, etc. families?		x	10. Will public housing be needed for the project?	x		11. Is public housing available?	x		12. Is it felt there will be adequate DSS housing housing available during relocation period?	x		13. Will there be a problem of housing within financial means?	x		14. Are suitable business sites available (list source).			15. Number months estimated to complete RELOCATION?			18 - 24 Months	20-40M	0	150-250	0	20-40M	0	150-250	0
					Yes	No	Explain all "YES" answers.																																																								
						x	1. Will special relocation services be necessary?																																																								
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					100 UP	2	600 UP	0	100 UP	310	600 UP	213																																																			
					TOTAL	2		3		326		216																																																			

REMARKS (Respond by number)

*Income level and dwelling value were measured in thousands.

- 3) There are several unimpacted businesses within Alt VA that will remain functional after the project.
- 4) There are 19 businesses that will be impacted by the project. Please see below for entire list.
- 6) MLS, Internet, Housing Authority, Apartment Listings, Newspaper, For Sale By Owner – After researching the area, more than 50 residential listings were discovered as replacement options for owners and tenants impacted by the project
- 8) The area impacted by the Alt VA consists of majority low-income housing. Review of the area revealed that there is available housing, however; due to rising home prices, scarce inventory for low income housing, and assumed lower levels of income, locating comparable housing within the displacee's financial means may be challenging. Last resort housing in the form of supplemental payments as well as rental assistance payments must be considered given the market's current conditions.
- 11) There is public housing available, however; it is not expected to be necessary for this project.
- 12) Review of the area revealed that there is adequate DSS housing available (more than 50 listings) but securing a replacement dwelling will require additional assistance as explained above in item no. 8.
- 13) See explanation given no. 8. The impacted area is a low-income neighborhood. Locating housing within the displacee's financial means most likely necessitate the use of supplemental payments and rental assistance payments to secure comparable replacements dwellings.

14) There are available business sites within the project limits. Resources used are: LoopNet, MLS, Internet, and Newspaper (Located more than 50 listings for office, retail, and industrial space)

Business Locations By parcel, name, size, & number of employees

Parcel # ROW Comparison Map	Business	Size	Bus.Type	# Employees
116	Insulation Systems Inc.	Small	Commerical Services	3 to 10
116	WorldParts	Small	Commerical Services	3 to 10
116	Decorative Concrete Solutions	Small	Concrete, Masonry, Industrial Flooring	3 to 10
127	Roy's Carburetor Tune-Up Service	Small	Automotive Service	3 to 10
147	Satellite Bar & Lounge	Small	Bar and Food Service	3 to 10
168	Love, Lydia Bakery & Café	Small	Food Service	3 to 10
193	Sunset Park Food Mart	Small	Grocery	3 to 10
196	Kenny Lovitts Auto Sales	Small	Car Sales	3 to 10
220	Culligan Water Conditioning	Medium	Water Treatment Equipment and Service	15 to 25
226	F&J Auto	Small	Car Sales	3 to 10
226	Port City Taxi	Small	Taxi Service	3 to 10
235	Seashore Discount Drugs	Small	Retail – Pharmacy/ Grocery	3 to 10
238	Furniture Store	Small	Retail	3 to 10
239	Cape Fear Generators	Small	Sales - Generators	3 to 10
242	County Fresh Produce	Small	Retail	3 to 10
243	Fu Wangz	Small	Restaurant	3 to 10
245	Ezzelle's Breakfast House	Small	Restaurant	3 to 10
308	Economy Signs & Banners	Small	Sign Company	3 to 10
331	Ken Baker BMW/Mercedes Service	Medium	Car Sales	15 to 25



Right of Way Agent

01-24-19
Date



Relocation Coordinator

01/28/2019
Date

APPENDIX C: NOTICE OF INTENT

directions, maps, and nearby hotels may be found by accessing the RTCA Web site.

SUPPLEMENTARY INFORMATION: Pursuant to section 10(a)(2) of the Federal Advisory Committee Act (Pub. L. 92-463, 5 U.S.C., Appendix 2), notice is hereby given for a Special Committee 189/EUROCAE Working Group 53 meeting.

Meeting Objectives

- Resolve all comments and issues to complete the Safety and Performance Requirements Standard for Air Traffic Data Link Services in Oceanic and Remote Airspace by July 26, 2006 for final review and consultation.

- Resolve all comments and issues to complete the FANS 1/A-ATN Interoperability Standard by July 26, 2006 for final review and consultation.

- Agree on a work statement for SC-189/WG-53 that details work items and milestones.

The plenary agenda will include:

- June 20:
 - Opening Plenary Session (Welcome, Introductions, and Administrative Remarks, Review and approval of Agenda and Meeting Minutes) Administrative.
 - SC-189/WG-53 co-chair progress report and review of work program.
 - Determine and agree to breakout groups if necessary.
- June 21-22:
 - Breakout groups, as agreed, and plenary debriefs, as necessary.
- June 23:
 - Debrief on progress for the week.
 - Closing Plenary Session (Review schedule and new action items. Any other business, Adjourn).

Attendance is open to the interested public but limited to space availability. With the approval of the chairmen, members of the public may present oral statements at the meeting. Persons wishing to present statements or obtain information should contact the person listed in the **FOR FURTHER INFORMATION CONTACT** section.

Members of the public may present a written statement to the committee at any time.

Issued in Washington, DC, on May 3, 2006.

Francisco Estrada C.,

RTCA Advisory Committee.

[FR Doc. 06-4363 Filed 5-10-06; 8:45 am]

BILLING CODE 4910-13-M

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

Environmental Impact Statement: Brunswick and New Hanover Counties, NC

AGENCY: Federal Highway Administration (FHWA).

ACTION: Notice of intent.

SUMMARY: The FHWA is issuing this notice to advise the public that an environmental impact statement will be prepared for a proposed highway project in Brunswick and New Hanover Counties, North Carolina.

FOR FURTHER INFORMATION CONTACT:

Clarence W. Coleman, PE., Operations Engineer, Federal Highway Administration, 310 New Bern Avenue, Suite 410, Raleigh, North Carolina 27601-1418, Telephone: (919) 856-4346.

SUPPLEMENTARY INFORMATION: The FHWA, in cooperation with the North Carolina Department of Transportation (NCDOT) and the North Carolina Turnpike Authority (NCTA), will prepare an environmental impact statement (EIS) on a proposal to construct a multi-lane highway facility in Brunswick and New Hanover Counties, North Carolina. Known as the Cape Fear Skyway, the proposed improvement would extend from US 17 in Brunswick County, near the community of Bishop, to US 421 in the city of Wilmington for a distance of approximately 9.5 miles. The project would include a crossing of the Cape Fear River.

The proposed highway facility is considered necessary as a means to improve regional traffic flow, enhance access to the North Carolina Ports, improve emergency service response times and facilitate emergency evacuation. Preliminary alternatives to be evaluated include (1) taking no action (2) Transportation System Management (TSM); (3) Transportation Demand Management (TDM); (4) Mass Transit; and (5) constructing a multi-lane facility on new location with full control of access. Incorporated into and studied with the various build alternatives will be design variations of grade and alignment. The EIS will address environmental, social, and economic impacts associated with the development of the proposed action.

Letters describing the proposed action and soliciting comments will be sent to appropriate Federal, State, and local agencies, and to private organizations and citizens who have previously expressed or are known to have an

interest in this proposal. A series of public meetings will be held in the vicinity of the project throughout the development of the EIS. In addition, a public hearing will be held. Public notice will be given of the time and place of the meetings and hearing. The draft EIS will be available for public and agency review and comment prior to any public hearings being held.

To ensure that the full range of issues related to this proposed action are addressed and all significant issues identified, comments and suggestions are invited from all interested parties. Comments or questions concerning this proposed action and the EIS should be directed to the FHWA at the address provided above.

(Catalog of Federal Domestic Assistance Program Number 20.205, Highway Planning and Construction. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities apply to this program)

Issued on: May 4, 2006.

Clarence W. Coleman,

Operations Engineer, Raleigh, North Carolina.

[FR Doc. 06-4367 Filed 5-10-06; 8:45 am]

BILLING CODE 4910-22-M

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

Environmental Impact Statement: Sampson, Duplin, and Cumberland Counties, NC

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Revised notice of intent.

SUMMARY: The FHWA is issuing this notice to advise the public that we are rescinding the Draft Environmental Impact Statement for a proposed highway project in Sampson, Duplin, and Cumberland Counties, North Carolina

FOR FURTHER INFORMATION CONTACT:

Clarence W. Coleman, P.E., Operations Engineer, Federal Highway Administration, 310 New Bern Avenue, Ste 410, Raleigh, North Carolina 27601-1418, Telephone: (919) 856-4346.

SUPPLEMENTARY INFORMATION: The FHWA, in cooperation with the North Carolina Department of Transportation (NCDOT), is rescinding the Draft Impact Environmental Statement (DEIS) for the proposed NC 24 improvements from 2.8 miles east of I-95 to I-40. In June, 1994, the DEIS for the project was approved, published, and made available for public review. The DEIS evaluated in detail twelve (12) Build alternatives.

APPENDIX D: PUBLIC INVOLVEMENT



April 19, 2006

MEMORANDUM

TO: Project File (Project No.: 31825110)

FROM: David Griffin

RE: Summary of Comments – Citizens Informational Workshops / Public Scoping Meetings
April 10-11, 2006
Cape Fear Skyway

General Comments

- General response at both meetings was supportive of the project.
- The project was not processing to construction quickly enough.
- The most opposition heard was from citizens who personally owned property close to the feasibility study alternative. Most of these comments were received from those who live near the eastern and western termini, and expressed concerns related to relocations, property values, traffic impacts on local streets, noise and air pollution.
- Many citizens feel this is a "political" project and the No-Build Alternative will not be considered seriously.
- During both meetings, participants wanted reassurance that there would be additional opportunities for public input prior to final decisions being made.

Because there were two separate meetings and two distinct groups of citizens, comments are best sorted by each meeting.

April 10th Citizen Informational Workshop/Public Scoping Meeting Comments/Concerns

Meeting held at Codington Elementary School; Wilmington, NC; 4:30PM – 8:00 PM.

- The eastern section of the study area seems to have a higher population density in and around the US 421(Carolina Beach Road)/Independence Boulevard intersection.
- Citizens asked how Independence Boulevard and other routes in Wilmington will accommodate traffic from the Cape Fear Skyway.
- Other termini on Carolina Beach Road (US 421) should be considered. According to the participants, a terminus at Shipyard Boulevard would provide a more direct access to the Wilmington Port and would direct traffic along an existing commercial



corridor. Another suggestion was to move the eastern terminus somewhere south of the proposed terminus. This area is much less developed than the US 421/Independence Boulevard area.

- Support development of alternative emergency evacuation route.
- Need better access across Cape Fear River due to delays on US 17 (Cape Fear Memorial Bridge).
- Project schedule - need to get to construction quickly - don't want to see project get drawn out like other projects in the region.
- Noise was a common concern. Citizens noted noise from large trucks, particularly Jake brakes. One person from Echo Farms expressed concern over vehicle noise on the existing Cape Fear Memorial Bridge due to the open grates and noted the noise could be heard in Echo Farms if the wind blew in a certain direction.
- Impacts on property values, particularly in the Echo Farms, Chula Vista Drive, and Sunnyvale neighborhoods.
- An interchange is needed at River Road (would provide direct access to the Port); Wilmington Port needs additional truck access.
- Additional route needed for emergency evacuation.
- Project would relieve congestion on US 17.
- Air pollution from truck exhaust and brake dust.
- Visual impacts.
- Bridge aesthetics--citizens wanted to see a signature bridge.
- Traffic congestion on local street system, especially Independence Boulevard and US 421. These streets are already unsafe and heavily congested. There was some doubt by one person that this project would alleviate truck traffic through Wilmington.
- Residential/commercial displacements.
- The CP&L power line over the Cape Fear River will determine vertical clearance. No need to build the Skyway any taller.
- Ensure the project is coordinated with the proposed international port in Southport.
- Bridge height/touch down point could be invasive.
- Numerous people were concerned with the cost of the project and whether tolls would cover the total cost or if there would be additional costs to taxpayers. Several people asked about what the toll would be on the proposed bridge.
- One citizen identified a proposed church at the southwest quadrant of Independence Boulevard and US 421.
- One citizen was concerned that the Cape Fear Skyway Bridge is located too close to the Port--if there is a terrorist attack against the port--bridge may be affected--evacuation could be an issue.
- Electronic toll collection is preferred – do not want to stop to pay a toll.



April 11th Citizen Informational Workshop/Public Scoping Meeting
Comments/Concerns:

Meeting held at Belville Elementary School; Belville-Leland, NC; 4:30PM – 8:00 PM.

- NC 133 needs an interchange.
- Avoid piecemeal planning – ensure congested NC 133 is included in the study.
Asked how NC 133 will accommodate traffic from the Cape Fear Skyway.
- Need to look at comprehensive assessment of transportation needs and demands in the area -- and coordinate both Cape Fear Skyway and the proposed international port in Southport ---perhaps proposed crossing of the Cape Fear River could occur further south to better serve Southport.
- Investigate an interchange location between US 17 and NC 133.
- Coordinate project with proposed new port.
- Citizens asked if the project is being coordinated with other major development projects, e.g. Brunswick Forest.
- There were several questions regarding the Wilmington Bypass, most of which were focused on the proposed interchange and schedule for ROW acquisition.
- Citizens asked how the project will affect their property value.
- Interest in cultural resources.
- Loss of property and homes, particularly in the Snee Farm and Stoney Creek Plantation neighborhoods. One attendee stated that he was about to undertake some major home improvement projects (pool, remodel kitchen) and doesn't want to see this work "bulldozed."
- Avoid the Cedar Lake Salt Marsh (located in the vicinity of Stoney Creek Plantation).
- Widespread wetlands are in the area.
- Accidents on Cape Fear Memorial Bridge result in delays and congestion.
- US 17 is heavily congested by those driving to the beaches in Brunswick County.
The Skyway would do nothing to alleviate this congestion.
- The western terminus should be relocated further south, where there is an abundance of vacant land and no relocations needed.
- Prospective homebuyers should be made aware of the proposed Skyway, including rapidly growing Brunswick Forest and Mallory Creek.
- Project schedule is a concern. Construct the project as quickly as possible.
- The project is not useful without completion of the Wilmington Bypass.
- Effects of the project on adjacent property values--in the area south of the western project terminus.
- One long time resident was fearful of the induced growth resulting from the project-- does not want anymore people to be attracted to the area.
- Electronic toll collection is preferred – do not want to stop to pay a toll.



Memorandum/Project File

April 18, 2006

Page 4

- Improvements along the length of NC 133 need to be included in the scope of the project to complete the network.
- One gentleman stated that when the second bridge (Memorial Bridge) was built, there was opposition to the additional cost and delays associated with building a higher structure - if the higher structure had been built at that time, there would not be the intense need for a high structure now.



Join us for one of two
Citizens Informational Workshops
Cape Fear Skyway Project



The N.C. Turnpike Authority and the N.C. Department of Transportation will hold two public workshops to discuss the proposed Cape Fear Skyway that will extend from US 17 in Brunswick County to US 421 near Independence Boulevard in New Hanover County. The road will be an approximate 10-mile median-divided facility with a high-level structure over the Cape Fear River. The Cape Fear Skyway is being considered as a toll road project.

NCTA and NCDOT staff will present information, answer questions and receive comments regarding the proposed project. The workshops will be conducted in an informal, open-house setting. There will be no formal presentations; participants are encouraged to drop in at any time between 4:30 – 8:00 p.m.

Wilmington:

Monday, April 10, 2006 4:30-8:00 P.M.
Codington Elementary School
4321 Carolina Beach Road (US 421 Business)
Wilmington, NC 28412

Belville-Leland:

Tuesday, April 11, 2006 4:30-8:00 P.M.
Belville Elementary School
575 River Road (NC 133 SE)
Belville-Leland, NC 28451

Note: NCTA will provide auxiliary aids and services for disabled persons who wish to participate in the workshops. For more information or to receive special services, please call 1-800-816-7817 (toll free) by April 3, 2006.



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North Carolina Turnpike Authority
1542 Mail Service Center
Raleigh, NC 27699-1542

Join us to discuss the
Cape Fear Skyway

April 10th – 4:30-8:00 p.m.
Codington Elementary School
Wilmington

OR

April 11th – 4:30 – 8:00 p.m.
Belville Elementary School
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MEMORANDUM

To: Project File

From: David Griffin

Date: June 26, 2006

Subject: **Report of Meeting, June 26, 2006, 12:30 P.M.**
North Carolina Turnpike Authority – Cape Fear Skyway Project
Meeting with Snee Farm/Stoney Creek/Planters Walk Community Leaders
Chili's Restaurant, College Avenue, Wilmington, North Carolina

Attendees:

Ms. Jill Vargas -Snee Farm
Ms. Robin McLawhorn – Snee Farm
Ms. Amy Campbell – Snee Farm
Mr. Terry Obrock – Snee Farm
Mr. Wayne Huffman – Snee Farm
Mr. Tracy Roberts, AICP – HNTB/GEC
Mr. David Griffin, CEP – URS/Consultant

Following introductions, the meeting opened with a discussion about the neighborhoods/communities about which the meeting was being held, these being Snee Farm, New Snee Farm, Planters Walk at Snee Farm, and Stoney Creek.

The community leaders jointly provided some background information about the neighborhoods stating that Snee Farm was the oldest (dating back about 20 years), followed by Stoney Creek and New Snee Farm. Planters Walk is the most recent dating back only about two or three years. Planters Walk has 35 homes with about 50% completed. Stoney Creek is comprised of approximately 150 homes. Terry stated that he, Wayne, Robin, Amy, and Jill were representing the 49 lots along Combine Lane.

There was an exchange of questions, answers, explanations and dialogue that occurred during the course of the two and ½-hour long meeting.



David displayed the large map that depicted the conceptual Wilmington Bypass Interchange layout, the location of area roads, and neighborhoods and the conceptual location of the Wilmington Bypass. Snee Farm, Planters Walk, and Stoney Creek were labeled on the map. He explained that the Bypass was the starting point for the Skyway project that extended eastward to US 421 in Wilmington. He explained the parameters considered during the alternatives development process, which include natural resources, as well as human and cultural resources. He also provided an overview of engineering constraints that are typically encountered during projects of this nature. Any alternative to be studied in detail must also meet the project's purpose and need. He also described the ultimate impact footprint as being a typical right-of-way width of 300-350 feet, flared at interchanges to accommodate ramps for interchange movements.

The attendees asked a number of questions.

1. *The attendees asked for clarification of the anticipated residential impacts.* Contrary to the perception that the entire community would be impacted, David explained further about the right-of-way footprint and impact area. He explained differences that might occur from location to location, using the centerline of a neighborhood street versus traversing one side of the street or another, and how ramps might affect the right-of-way area required near US 17. It is unlikely that impacts can be totally avoided. Due to the project being in its early stages, no calculations of residential impacts were known at this time.
2. *The attendees referenced a map showing an alignment for the Skyway, and felt the project's location had been pre-determined.* David explained that the alignment they were referencing was developed as part of a Feasibility Study prepared by the North Carolina Department of Transportation (NCDOT) in 2003. David explained that the purpose of the study was to show a feasible location for the project, identify potential environmental constraints, and to develop a cost estimate. David stressed that the alignment for the Skyway had not been determined. The Feasibility Study alignment is but one of several alignments that will be evaluated.
3. *The attendees asked why the Skyway had to begin at the Bypass location – and a related question about why the Bypass interchange was located where it was.* The Skyway begins at the proposed US 17/Bypass interchange because of the traffic patterns and forecasts. It is a location depicted in the Thoroughfare Plan that addresses traffic and transportation on a system level. This location is fixed based on the Bypass studies that have taken place over a number of years. Should the Bypass interchange be moved, the Skyway would likely be moved as well. The Bypass study process is much farther



advanced than the Skyway study process and has undergone environmental and agency reviews. Attendees wanted to know if the Bypass interchange could be relocated further south along US 17, particularly in the vicinity of NC 87. Further questions must be directed to Mr. Vince Rhea, NCDOT – Project Development and Environmental Analysis Branch.

4. *Will the Skyway be four or six lanes?* David explained that the Skyway is likely to be four lanes but could be designed for six lanes. This decision has not been made and is based on traffic forecasts and other factors. It is possible that right-of-way would be purchased to accommodate a six-lane facility. The initial four lanes would be built near the outer limits of the right-of-way, which would permit construction of two additional lanes inside the median. The facility will be designed as a freeway with full control of access (i.e. access will be allowed at interchanges only). The posted speed limit would likely be 65 or 70 mph.
5. *The attendees asked about how noise is addressed and mitigated.* David and Tracy explained that there is a policy for addressing noise and methods for determining if walls/barriers are warranted. Tracy directed them to NCDOT's website.
6. *The attendees asked about schedules.* The steps to be taken include first developing alternative concept alignments and applying environmental screening to evaluate impacts/effects and conducting a comparative analysis. This is taking place now and concepts are anticipated by late summer. This process would result in a narrowing of alignments for which functional design drawings would be developed. Additional evaluations would occur in order to identify alternatives to study in greater detail and carry forward in the DEIS. This is expected to occur in late summer/early fall. The DEIS would address impacts of the alternatives, including the No-Build, based on preliminary design level plans (spring 2008). These alternatives would be presented at a Public Hearing (expected in summer 2008) and selection of a "preferred" alternative would take place in the fall of 2008. Right of way acquisition would begin in 2009.
7. *The attendees asked about why the NCTA opted not to attend the community meeting at 7:00 PM.* Tracy explained that the meeting was incorrectly announced in the newspaper (*Wilmington Star News*) as "public," but was intended as a small group meeting for the Snee Farm community only. Public meetings must follow proper protocol for advertising, which was not done since the meeting was not intended to be public. Although a correction was published in the newspaper that the meeting was not public, it would largely go unnoticed. Also, public meetings are typically scheduled when there is new information to present. At this time, there is no new information from what was



Memorandum/Project File

June 26, 2006

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presented at the April 10-11 workshops. Thus, NCTA opted to reschedule the meeting due to the confusion surrounding whether the meeting was public or private. The next series of workshops are planned for fall 2006, at which time additional information would be available to present to the public.

The attendees were appreciative of the time spent with them by members of the project team. Copies of the April 10-11 workshop handouts and comment forms were provided. They asked if a small group meeting for the community could be scheduled in the future. Tracy replied that no additional information beyond that presented at the April 10-11 workshops could be presented and that the best time for public dissemination of new information would be during the anticipated fall 2006 workshops. Any meetings with Snee Farm prior to then would need to be coordinated through NCTA

The meeting adjourned at 3:00 PM.

DAG:bkc



Cape Fear Skyway

New Hanover and Brunswick Counties

STIP No. U-4738

CITIZENS INFORMATIONAL WORKSHOP SUMMARY

Citizens Informational Workshops (CIW) were held in March 2011 in New Hanover and Brunswick Counties to present the project purpose and need and preliminary alternatives, and to solicit input from the public on these topics. A newsletter was distributed on March 1, 2011 notifying the public of the workshops and was sent to approximately 6,500 property owners within the project study area. Displays at the workshop included maps of the project study area and preliminary corridor segments, as well as information on the transportation planning process and the preliminary purpose and need for this project. A presentation that overviewed the history of the project, purpose and need, and alternatives considered, played continuously during the workshop. Appended to this summary are the comment form, newsletter, workshop handout, presentation, and display boards.

The first CIW was held on March 22, 2011 between 5:00 pm and 8:00 pm at Belville Elementary School located at 575 River Road in Belville and was attended by 285 individuals. The second CIW was held on March 24, 2011 during the same time period at Alderman Elementary, located at 2025 Independence Boulevard in Wilmington and was attended by 132 individuals. **Table 1** summarizes public participation for the workshops.

In addition to the CIWs, Local Officials Meetings were held from 2pm to 3:30pm on March 22 and March 24 to allow local officials to preview materials to be shown to the public at the CIWs. Jennifer Harris of NCTA gave a formal presentation at the beginning of each meeting. The presentation given was the same presentation that was looped at the CIWs, and included information about the history of the project, purpose and need, and alternatives considered.

Table 1: Cape Fear Skyway Workshop Summary

Date	March 22, 2011		March 24, 2011	
Meeting	Local Officials Meeting	Citizens Informational Workshop	Local Officials Meeting	Citizens Informational Workshop
Components	Slide presentation and discussion	Workshop and looping presentation	Slide presentation and discussion	Workshop and looping presentation
Location	Brunswick County Complex Bolivia, NC	Belville Elementary School Leland, NC	Wilmington City Hall Wilmington, NC	Alderman Elementary School Wilmington, NC
Number of Attendees*	19	265	12	132

*Not including NCTA, NCDOT, FHWA and Consulting Staff in attendance. Number of attendees based on those who signed in on provided sign in sheets.

303 people submitted written comments during the comment period using the provided comment forms (287) or via email (16). Comment forms were distributed at the workshops and were available online to obtain public input on the project study area, identified project needs, purposes, and range of alternatives.

Four questions were included on the comment forms:

- 1) Do you have any comments or questions regarding the purpose and need for the Cape Fear Skyway project?
- 2) Based on the maps shown at the workshop, which alternative do you believe would best meet the transportation need? Are there any other options you feel should be considered?
- 3) Do you have any comments or questions regarding the environmental or human impacts resulting from the project?
- 4) Please provide any additional comments or questions.

Comments that were frequently stated are listed below:

- Concerns regarding completion of other projects such as I-140 (Wilmington Bypass between US 74/76 and US 17) and US 17 widening between US 74/76 and the Cape Fear Memorial Bridge.
- Concerns regarding cost of the project and the amount of tolls.
- Opposition to project in general.
- Support of project due to congestion in area.
- Impacts to human environment – most notably area neighborhoods such as Brunswick Forest, Snee Farm, and Stoney Creek.
- Opposition to project, yet favor upgrading existing roads such as US 17.

Table 2 includes a tally of the total number of comments received by category. Note that for many of the comment forms, more than one issue or concern was received per question; therefore, the number of comments received does not equal the amount of comment form questions.

Table 2: Cape Fear Skyway Workshop Comment Summary

Comment Categories	Totals
Completion of other projects	52
Overall cost concerns	59
Concerns with tolling aspect	122
Opposed to project	45
Opposed to project but support upgrade existing	39
In favor of project	48
Favor upgrade of existing roads	34
Favor a new bridge next to CFM Bridge/replace CFM	38
Human environment concerns/impacts to neighborhoods	196
Natural environment concerns	28
Favors tie-in at Independence	13
Favors tie-in at Shipyard	2
Favor Alternative A (Northern Alignment)	119
Favor Alternative B	78
Favor Alternative C	112
Favor Alternative D	97
Favor Alternative E	11
Favor Alternative F	14
Favor Alternative G	1
Favor Alternative H	0
Favor Alternative I	1
Favor Alternative J	1
Favor Alternative K	9
Favor Alternative L	4
Favor Alternative M	10
Favor Alternative N	5
Suggests a tunnel	3
Suggests developing mass transit	3
Suggests direct access to port for trucks	3
Negative feedback on CIW (no Q&A session, too noisy, etc.)	13
Positive feedback on CIW	3

Comments were also tallied per question based on the 287 responses received via comment form. Responses to Question 1 were tallied and results are shown in **Table 3**. Question 1 asked citizens if they had any comments or questions regarding the purpose and need for the Cape Fear Skyway project.

Table 3: Cape Fear Skyway Workshop Comment Summary – Responses to Question 1

Comment Categories	Totals
Completion of other projects	15
Overall cost concerns	24
Concerns with tolling aspect	9
Opposed to project	29
Opposed to project but support upgrade existing	26
In favor of project	37
Favor upgrade of existing roads	7
Favor a new bridge next to CFM Bridge/replace CFM	9
Human environment concerns/impacts to neighborhoods	104
Natural environment concerns	0
Favors tie-in at Independence	2
Favors tie-in at Shipyard	0
Favor Alternative A (Northern Alignment)	0
Favor Alternative B	0
Favor Alternative C	0
Favor Alternative D	0
Favor Alternative E	0
Favor Alternative F	1
Favor Alternative G	0
Favor Alternative H	0
Favor Alternative I	0
Favor Alternative J	0
Favor Alternative K	0
Favor Alternative L	0
Favor Alternative M	0
Favor Alternative N	0
Suggests a tunnel	0
Suggests developing mass transit	0
Suggests direct access to port for trucks	3
Negative feedback on CIW (no Q&A session, too noisy, etc.)	1
Positive feedback on CIW	1
No response to question	33

Responses to Question 2 were tallied and results are shown in **Table 4**. Question 2 asked citizens which alternative they believed would best meet the transportation need based on maps shown at the workshops, and if there are any other options they feel should be considered.

Table 4: Cape Fear Skyway Workshop Comment Summary – Responses to Question 2

Comment Categories	Totals
Completion of other projects	19
Overall cost concerns	3
Concerns with tolling aspect	1
Opposed to project	10
Opposed to project but support upgrade existing	10
In favor of project	0
Favor upgrade of existing roads	14
Favor a new bridge next to CFM Bridge/replace CFM	20
Human environment concerns/impacts to neighborhoods	11
Natural environment concerns	2
Favors tie-in at Independence	8
Favors tie-in at Shipyard	2
Favor Alternative A (Northern Alignment)	117
Favor Alternative B	78
Favor Alternative C	112
Favor Alternative D	97
Favor Alternative E	11
Favor Alternative F	12
Favor Alternative G	1
Favor Alternative H	0
Favor Alternative I	1
Favor Alternative J	1
Favor Alternative K	9
Favor Alternative L	4
Favor Alternative M	7
Favor Alternative N	3
Suggests a tunnel	2
Suggests developing mass transit	1
Suggests direct access to port for trucks	0
Negative feedback on CIW (no Q&A session, too noisy, etc.)	3
Positive feedback on CIW	1
No response to question	33

Responses to Question 3 were tallied and results are shown in **Table 5**. Question 3 asked citizens if they had any comments or questions regarding the environmental or human impacts resulting from the project.

Table 5: Cape Fear Skyway Workshop Comment Summary – Responses to Question 3

Comment Categories	Totals
Completion of other projects	1
Overall cost concerns	5
Concerns with tolling aspect	2
Opposed to project	3
Opposed to project but support upgrade existing	0
In favor of project	1
Favor upgrade of existing roads	0
Favor a new bridge next to CFM Bridge/replace CFM	0
Human environment concerns/impacts to neighborhoods	56
Natural environment concerns	26
Favors tie-in at Independence	1
Favors tie-in at Shipyard	0
Favor Alternative A (Northern Alignment)	0
Favor Alternative B	0
Favor Alternative C	0
Favor Alternative D	0
Favor Alternative E	0
Favor Alternative F	0
Favor Alternative G	0
Favor Alternative H	0
Favor Alternative I	0
Favor Alternative J	0
Favor Alternative K	0
Favor Alternative L	0
Favor Alternative M	0
Favor Alternative N	0
Suggests a tunnel	0
Suggests developing mass transit	0
Suggests direct access to port for trucks	0
Negative feedback on CIW (no Q&A session, too noisy, etc.)	0
Positive feedback on CIW	0
No response to question	115

Responses to Question 4 were tallied and results are shown in **Table 6**. Question 4 asked citizens if they had any additional comments or questions regarding the project.

Table 6: Cape Fear Skyway Workshop Comment Summary – Responses to Question 4

Comment Categories	Totals
Completion of other projects	12
Overall cost concerns	22
Concerns with tolling aspect	107
Opposed to project	0
Opposed to project but support upgrade existing	2
In favor of project	7
Favor upgrade of existing roads	12
Favor a new bridge next to CFM Bridge/replace CFM	6
Human environment concerns/impacts to neighborhoods	14
Natural environment concerns	0
Favors tie-in at Independence	2
Favors tie-in at Shipyard	0
Favor Alternative A (Northern Alignment)	1
Favor Alternative B	0
Favor Alternative C	0
Favor Alternative D	0
Favor Alternative E	0
Favor Alternative F	0
Favor Alternative G	0
Favor Alternative H	0
Favor Alternative I	0
Favor Alternative J	0
Favor Alternative K	0
Favor Alternative L	0
Favor Alternative M	0
Favor Alternative N	0
Suggests a tunnel	1
Suggests developing mass transit	1
Suggests direct access to port for trucks	0
Negative feedback on CIW (no Q&A session, too noisy, etc.)	8
Positive feedback on CIW	1
No response to question	82

The remaining comments received during the comment period were received via email (16), and the results shown in **Table 7**.

Table 7: Cape Fear Skyway Workshop Comment Summary – Responses via Email

Comment Categories	Totals
Completion of other projects	5
Overall cost concerns	5
Concerns with tolling aspect	3
Opposed to project	3
Opposed to project but support upgrade existing	1
In favor of project	3
Favor upgrade of existing roads	1
Favor a new bridge next to CFM Bridge/replace CFM	3
Human environment concerns/impacts to neighborhoods	11
Natural environment concerns	0
Favors tie-in at Independence	0
Favors tie-in at Shipyard	0
Favor Alternative A (Northern Alignment)	1
Favor Alternative B	0
Favor Alternative C	0
Favor Alternative D	0
Favor Alternative E	0
Favor Alternative F	1
Favor Alternative G	1
Favor Alternative H	0
Favor Alternative I	0
Favor Alternative J	0
Favor Alternative K	0
Favor Alternative L	0
Favor Alternative M	3
Favor Alternative N	2
Suggests a tunnel	0
Suggests developing mass transit	1
Suggests direct access to port for trucks	0
Negative feedback on CIW (no Q&A session, too noisy, etc.)	1
Positive feedback on CIW	1
No response to question	n/a



Cape Fear Skyway

Brunswick and New Hanover Counties



COMMENT FORM

Contact Information (Please Print)

Name: _____ Email Address: _____

Mailing Address: _____

Please use the space below to include your comments or questions concerning the Cape Fear Skyway project. If you need additional space, use the back of this comment form or include your own letter.

1. Do you have any comments or questions regarding the purpose and need of the Cape Fear Skyway project?

2. Based on the maps shown at the workshop, which alternative do you believe would best meet the transportation need? Are there any other options you feel should be considered?

3. Do you have any comments or questions regarding the environmental or human impacts resulting from the project?

4. Please provide any additional comments or questions.

Please drop your comment form in the comment box at the workshop or return to one of the addresses provided below by April 24, 2011.

David Griffin, CEP
URS
1600 Perimeter Park Dr., Suite 400
Morrisville, NC 27560
(919) 461-1446
david_griffin@urscorp.com

Jennifer Harris, PE
NC Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578
(919) 571-3000
capefear@ncdot.gov

N.C. Turnpike Authority Hosting Citizens Informational Workshops for Cape Fear Skyway Project



The Turnpike Authority is currently studying a project known as the Cape Fear Skyway, a potential toll road that would extend from U.S. 17 and future I-140 in Brunswick County to U.S. 421 in New Hanover County, including a high-rise bridge over the Cape Fear River.

Several potential corridors for the new roadway are being studied, along with the possibility of improving existing roads as an alternative to constructing the Skyway. The Turnpike Authority will also evaluate whether to develop the proposed project, in whole or in part, as a toll road. The project is estimated to cost between \$950 million and \$1.1 billion.

The central purpose of the Cape Fear Skyway would be to improve traffic flow and freight movements by connecting major routes in Brunswick and New Hanover Counties and to provide better access to the Port of Wilmington. It would also meet the goals of the North Carolina Strategic Highway Corridor Initiative, the North Carolina Intrastate System and the Wilmington Urban Area Metropolitan Planning Organization's Long Range Transportation Plan, all of which aim to promote regional and statewide mobility and economic vitality. Consistency with these plans will be considered during the evaluation of project alternatives.

In addition, the project would help reduce hurricane evacuation clearance time for residents and visitors as well as aid in emergency evacuation from Progress Energy's Brunswick Nuclear Plant in Southport.

The North Carolina Turnpike Authority will hold two Citizens Informational Workshops this month regarding the Cape Fear Skyway project. Representatives from the project study team will share information, answer questions and receive comments regarding the proposed project in an informal setting.

The same information will be available at each workshop. There will not be a formal presentation, and participants are encouraged to drop in at any time during the workshops. You may also submit comments or questions to the contacts listed on the back of this newsletter.

Workshop Locations & Times

Belville/Leland:

Tuesday, March 22nd, 5pm-8pm
Belville Elementary School
575 River Road (N.C. 133 SE)
Leland, NC 28412

Wilmington:

Thursday, March 24th, 5pm-8pm
Alderman Elementary School
2025 Independence Boulevard
Wilmington, NC 28403

Project Schedule

Draft Environmental Impact Statement	Spring 2013
Final Environmental Impact Statement	Fall 2013
Record of Decision	Winter 2013
Complete environmental planning with final alignment and design details	2013
Complete Financial Feasibility	2013

Project Purpose and Need

The primary needs for the Cape Fear Skyway project include:

- Additional Traffic Capacity
- Improved Access to the Port of Wilmington

The purpose of the proposed action is to improve traffic flow and enhance freight movements beginning in the vicinity of U.S. 17 and future I-140 in Brunswick County across the Cape Fear River to U.S. 421 near the Port of Wilmington in southern New Hanover County.

The Planning Process

In compliance with the National Environmental Policy Act (NEPA), the Turnpike Authority is preparing an Environmental Impact Statement (EIS) for the Cape Fear Skyway project. An EIS is a federally required document that describes the project's purpose and need, identifies project options and evaluates how each option may affect the surrounding community and natural environment.

Once a Draft EIS has been completed, the project options will be reviewed by the public, as well as local, state and federal agencies, and a preferred option will be selected. This option will then be developed further and a Final EIS will be prepared, followed by a Record of Decision, which gives final federal approval of the selected route.

Comments received from the public and government agencies play an important role in this process. In addition to hosting public workshops, the Turnpike Authority continues to work closely with federal, state and local officials on the development of this project.

Project Options Under Consideration

Several options are currently under consideration for the Cape Fear Skyway project. These include:

- **The No-Build or Do Nothing Option** - maintains road network as it is today
- **Transportation Demand Management Option** - improves activities that change traveler behavior, such as staggered work hours and ridesharing
- **Transportation Systems Management Option** - involves minor improvements such as new or improved signals, turn lanes, speed restrictions, etc.
- **Mass Transit/Multi-Modal Option** - includes adding bus or rail passenger services
- **Improve the Existing Roads** - improves existing U.S. 17 from the proposed I-140 /U.S. 17 interchange to U.S. 421 in New Hanover County, including improvements along U.S. 421
- **Construct New Road** - builds new road from the vicinity of U.S. 17 and future I-140 in Brunswick County to U.S. 421 in New Hanover County, including a bridge over the Cape Fear River
- **New Road/Improve Existing Road "Hybrid"** - includes combination of new roadway and improvements to existing U.S. 17

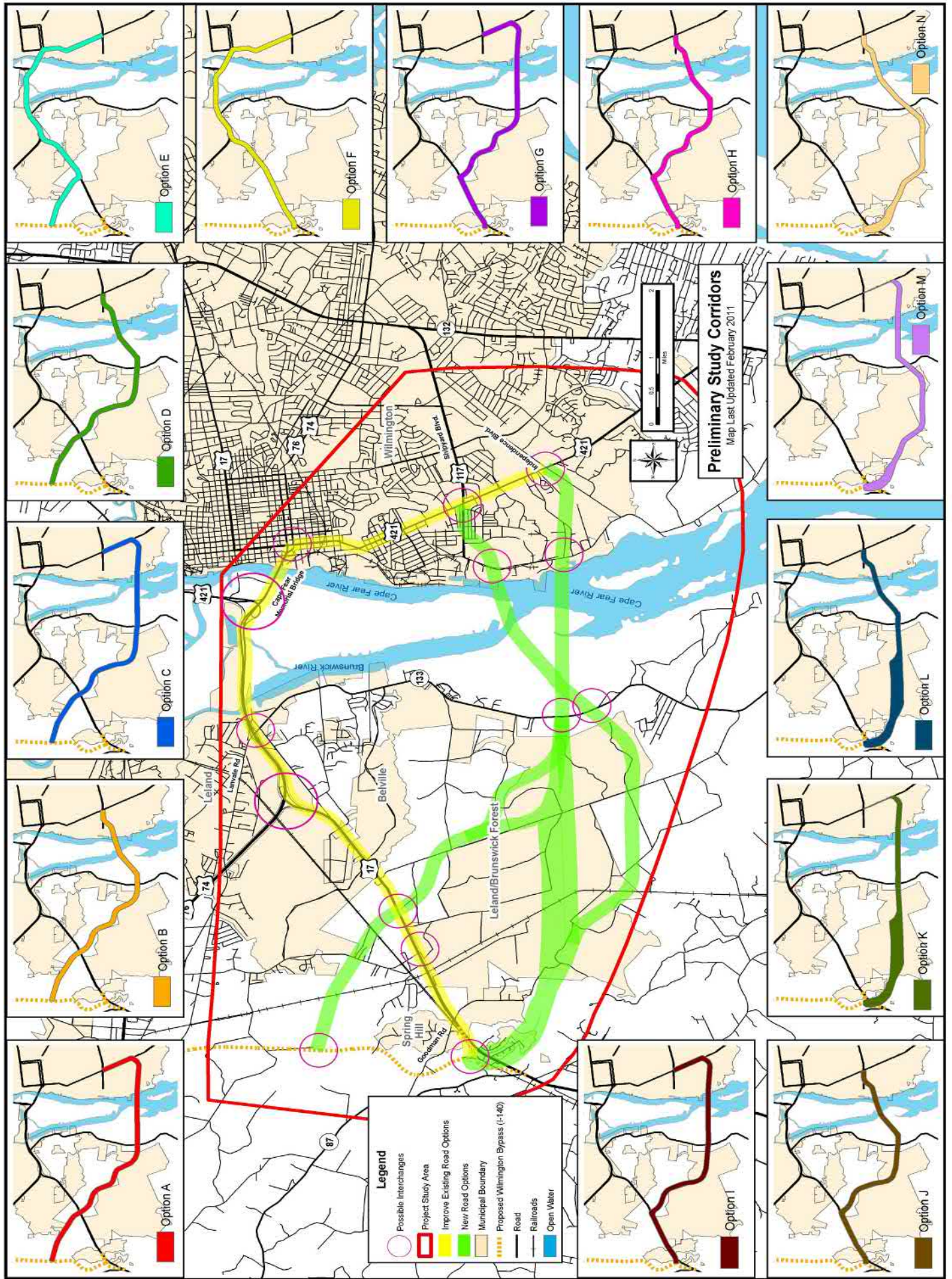
North Carolina Turnpike Authority

A business unit of the N.C. Department of Transportation, the Turnpike Authority is authorized to study, plan, develop and undertake preliminary design work on up to nine toll roads in the state. The Cape Fear Skyway is one of the Turnpike Authority's candidate toll roads.

Your input is important!

Your comments and recommendations will help the Turnpike Authority as it moves forward with developing this project. Sign up for our mailing list to receive future project newsletters, announcements and project updates.

For more information, visit www.ncturnpike.org/projects/Cape_Fear, call (800) 233-6315 toll free, or email capefear@ncturnpike.org



CHANGE SERVICE REQUESTED

Jennifer Harris, PE
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578



CITIZENS INFORMATIONAL WORKSHOPS CAPE FEAR SKYWAY MARCH 22nd & 24th, 2011

1

Tuesday, March 22nd, 2011, 5pm-8pm
Belville Elementary School
575 River Road (N.C. 133 SE)
Leland, NC 28412

2

Thursday, March 24th, 2011, 5pm-8pm
Alderman Elementary School
2025 Independence Boulevard
Wilmington, NC 28403

In compliance with the Americans with Disabilities Act (ADA), the Turnpike Authority will provide auxiliary aids and services for disabled persons who wish to participate in the Informational Workshops. To receive special services, please contact Jennifer Harris by phone (919) 571-3000 or email capefear@ncturnpike.org as soon as possible so that arrangements can be made.

For questions or comments about the project, to be added to the project mailing list, and/or to receive future newsletters please contact:

David Griffin, CEP
URS
1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
(919) 461-1446
david_griffin@urscorp.com

Jennifer Harris, PE
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578
(919) 571-3000
capefear@ncturnpike.org

Welcome to the Citizens Informational Workshop

March 22nd and 24th, 2011

What To Do at Today's Workshop

- ✓ **View the presentation.** The brief presentation provides information on the project, and will loop continuously throughout today's workshop.
- ✓ **Review the display boards, maps, and graphics that are on display.** Information on the project purpose and need, schedule, and other project information is on display. A map of project options being considered is also included in this handout.
- ✓ **Talk with the project representatives here tonight.** They are here to answer your questions and listen to your comments regarding the project, its impact it may have on your property, and the project process.
- ✓ **Tell us what you think!** Comment sheets are available and will be reviewed by the project representatives. You may fill out the comment sheet tonight, take it with you and mail it back to us, or use the contact information provided below to provide comments at a later date.

About the Project

The Turnpike Authority is currently studying a project known as the Cape Fear Skyway, a potential toll road that would extend from U.S. 17 and future I-140 in Brunswick County to U.S. 421 in New Hanover County, including a high-rise bridge over the Cape Fear River.

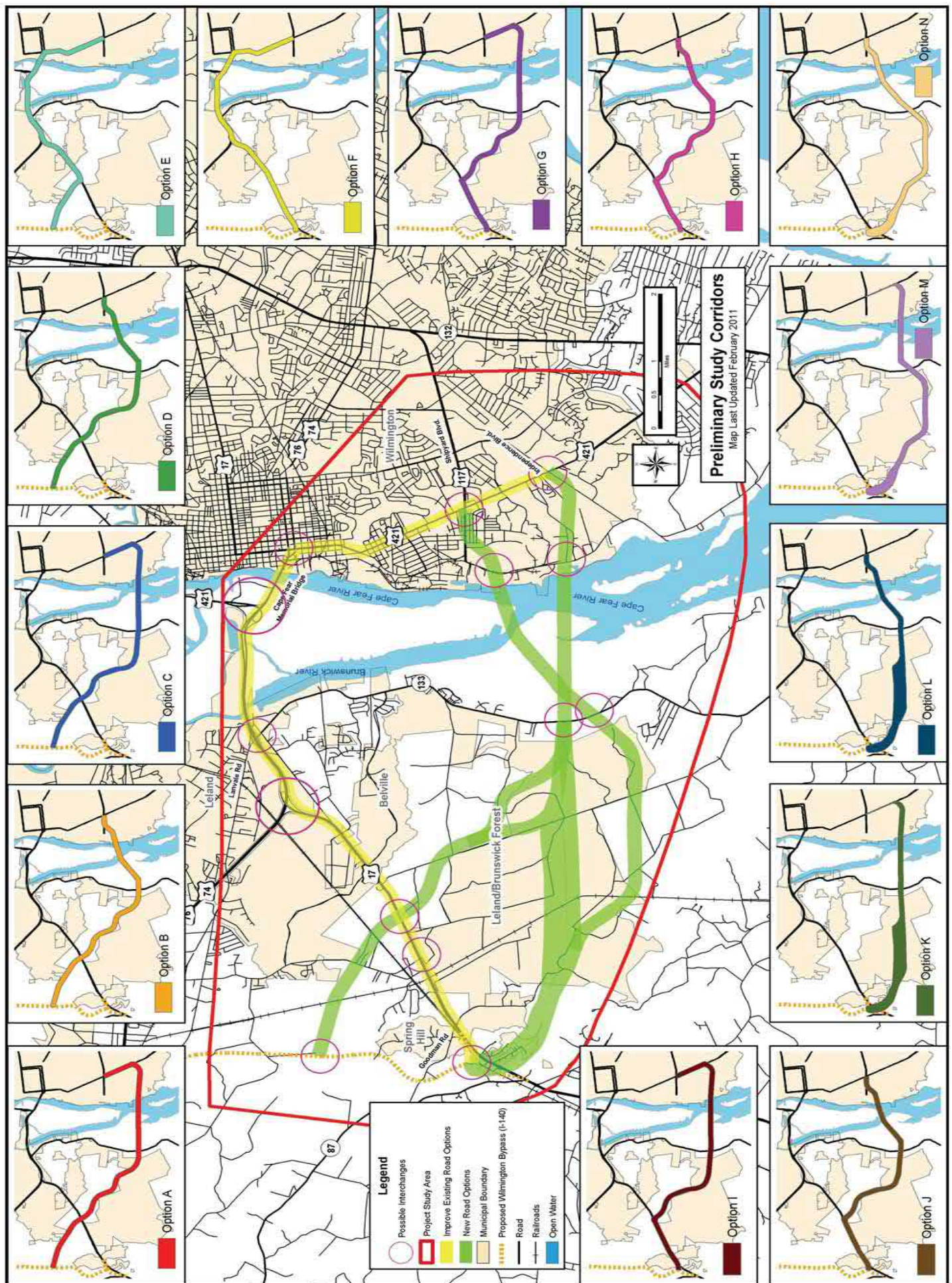
Several potential corridors for the new roadway are being studied, along with the possibility of improving existing roads as an alternative to constructing the Skyway. The Turnpike Authority will also evaluate whether to develop the proposed project, in whole or in part, as a toll road. The project is estimated to cost between \$950 million and \$1.1 billion.

The central purpose of the Cape Fear Skyway is to improve traffic flow and freight movements by connecting major routes in Brunswick and New Hanover Counties and to provide better access to the Port of Wilmington. It would also meet the goals of the North Carolina Strategic Highway Corridor Initiative, the North Carolina Intrastate System and the Wilmington Urban Area Metropolitan Planning Organization's Long Range Transportation Plan, all of which aim to promote regional and statewide mobility and economic vitality. Consistency with these plans will be considered during the evaluation of project alternatives.

Toll-Free Hotline: 800-233-6315

Email: capefear@ncdot.gov

Website: www.ncturnpike.org/projects/Cape_Fear



Project Purpose and Need

The primary needs for the Cape Fear Skyway project include:

- **Additional Traffic Capacity**
- **Improved Access to the Port of Wilmington**

The purpose of the proposed action is to improve traffic flow and enhance freight movements beginning in the vicinity of U.S. 17 and future I-140 in Brunswick County across the Cape Fear River to U.S. 421 near the Port of Wilmington in southern New Hanover County.

Secondary benefits of the project would be to meet goals of local and regional transportation plans, and provide reduced hurricane evacuation time.

Project Options Under Consideration

Several options are currently under consideration for the Cape Fear Skyway project. These include:

- **The No-Build or Do Nothing Option** - *maintains road network as it is today*
- **Transportation Demand Management Option** - *improves activities that change traveler behavior, such as staggered work hours and ridesharing*
- **Transportation Systems Management Option** - *considers minor improvements such as new or improved signals, turn lanes, speed restrictions, etc.*
- **Mass Transit/Multi-Modal Option** - *includes adding bus or rail passenger services*
- **Improve the Existing Roads** - *improves existing U.S. 17 from the proposed I-140 /U.S. 17 interchange to U.S. 421 in New Hanover County (including replacement of the existing Cape Fear Memorial Bridge), and includes improvements along U.S. 421*
- **Construct New Road** - *builds new road from the vicinity of U.S. 17 and future I-140 in Brunswick County to U.S. 421 in New Hanover County, including a bridge over the Cape Fear River*
- **New Road/Improve Existing Road “Hybrid”** - *includes combination of new roadway and improvements to existing U.S. 17*

North Carolina Turnpike Authority

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Project Schedule

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Your input is important!

Your comments and recommendations will help the Turnpike Authority as it moves forward with developing this project. Sign up for our mailing list to receive future project newsletters, announcements and project updates.

For more information, visit www.ncturnpike.org/projects/Cape_Fear, call (800) 233-6315 toll free, email capefear@ncdot.gov, or contact the project team listed below.

For additional information, please contact:

David Griffin, CEP
URS
1600 Perimeter Park Dr., Suite 400
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Jennifer Harris, PE
NC Turnpike Authority
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(919) 571-3000
capefear@ncdot.gov



CAPE FEAR SKYWAY

WELCOME TO THE CITIZENS INFORMATIONAL WORKSHOP

FOR THE CAPE FEAR SKYWAY PROJECT

5:00pm-8:00pm



CAPE FEAR SKYWAY

WORKSHOP SIGN-IN

- ✓ Let Us Know You Attended Tonight
- ✓ Pickup Handouts
- ✓ Watch Presentation about Project
- ✓ Review Workshop Stations
- ✓ Provide Your Comments



CAPE FEAR SKYWAY

Purpose and Need of the Project

- ✓ Traffic Capacity Deficiencies
- ✓ Improved Access to the Port of Wilmington

The purpose of the Cape Fear Skyway is to:

Improve traffic flow and enhance freight movements beginning in the vicinity of US 17 and future I-140 in Brunswick County across the Cape Fear River to US 421 near the Port of Wilmington in New Hanover County.

Secondary benefits of the project would be to meet goals of local and regional transportation plans, and provide reduced hurricane evacuation time.



CAPE FEAR SKYWAY

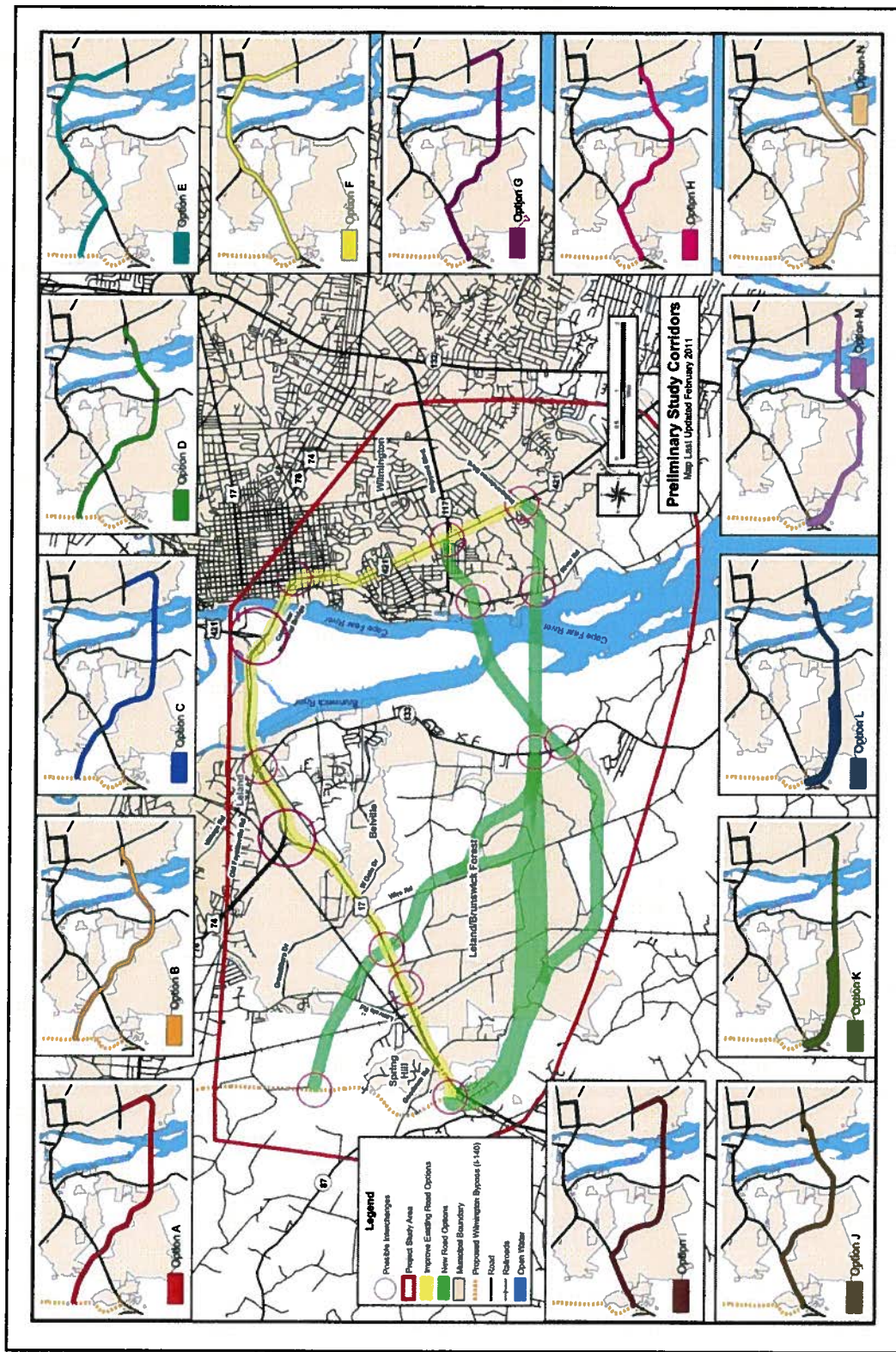
Project Options Under Consideration

- No-Build Option
- Mass Transit
- Multi-Modal
- Transportation Systems Management
- Travel Demand Management
- Improvements to Existing Roadways
- New Location Roadways
- Hybrids of New Location Roadways and Improvements to Existing Roadways

These options are evaluated based on the following:

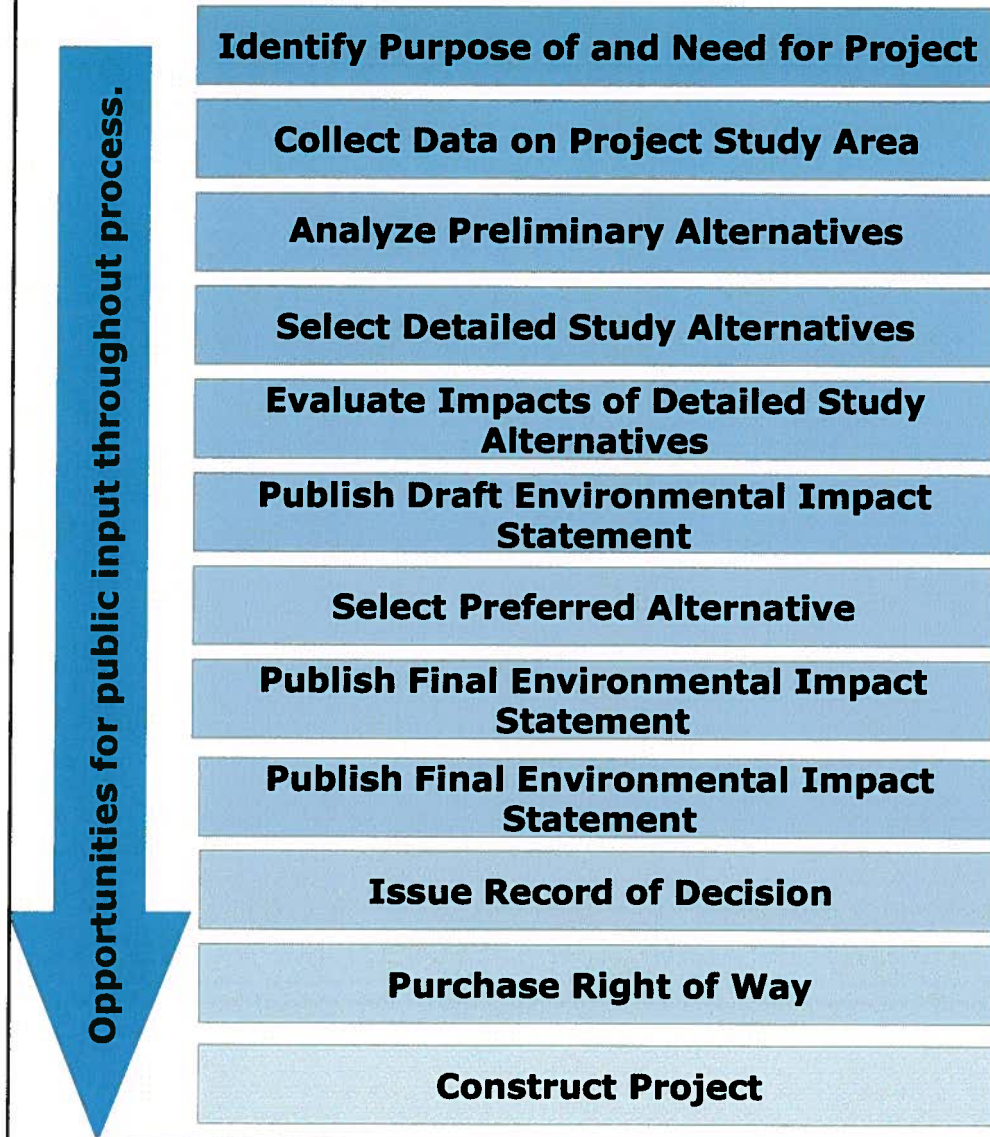
- Do they meet the purpose and need of the project?
- What kind of impact do they have on the human and natural environment?
- What kinds of costs are associated with these options?





CAPE FEAR SKYWAY

PROJECT STUDY PROCESS



PROJECT SCHEDULE

DRAFT ENVIRONMENTAL IMPACT STATEMENT	SPRING 2013
FINAL ENVIRONMENTAL IMPACT STATEMENT	FALL 2013
RECORD OF DECISION	WINTER 2013
COMPLETE ENVIRONMENTAL PLANNING WITH FINAL ALIGNMENT AND DESIGN DETAILS	2013
COMPLETE FINANCIAL FEASIBILITY	2013

CAPE FEAR SKYWAY

Comments Collected
Here

**WE NEED YOUR
INPUT!**

Please Take a Moment to Fill Out a
Comment Form

To Review the Project Information, Visit
the Following Website:

[ncturnpike.org/projects/Cape Fear/](http://ncturnpike.org/projects/Cape_Fear/)





Cape Fear Skyway

Citizens Informational Workshop

New Hanover and Brunswick Counties, North Carolina

This presentation will begin in 3 minutes.



Cape Fear Skyway

Citizens Informational Workshop

New Hanover and Brunswick Counties, North Carolina

This presentation will begin in 2 minutes.



Cape Fear Skyway

Citizens Informational Workshop

New Hanover and Brunswick Counties, North Carolina

This presentation will begin in 1 minute.



Purpose of today's workshop

- ❖ Provide an overview of the project
- ❖ Present project purpose and need and options considered
- ❖ Answer any questions you have about the project
- ❖ Provide an opportunity for you to submit comments about the project



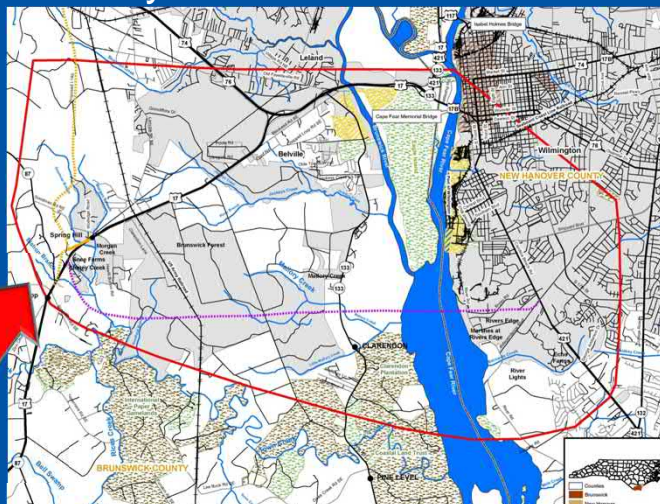


Project Highlights

- ❖ Project part of local and regional transportation plans since early 1990s
- ❖ Project being considered as a toll road
- ❖ Extends from US 17 / I-140 to US 421
- ❖ Includes crossing of Cape Fear River
- ❖ Several potential routes being considered

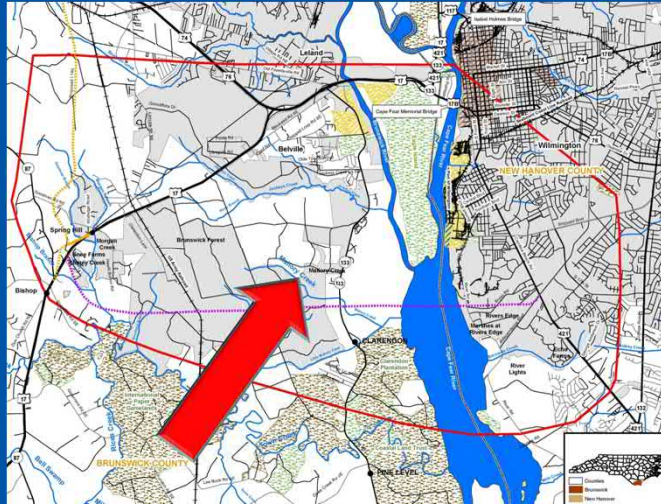


Project Study Area

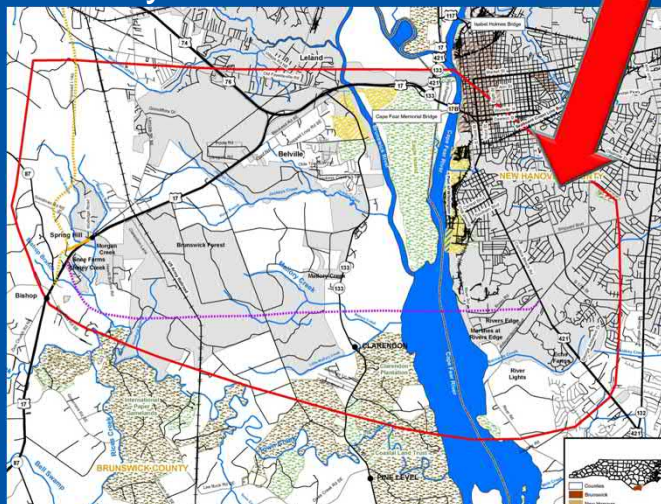




Project Study Area



Project Study Area





Why is this project needed?

- ❖ Traffic Capacity Deficiencies
- ❖ Improved Access to Port of Wilmington



Why is this project needed?

- ❖ Traffic Capacity Deficiencies
 - US 17 and other local roads
 - Cape Fear Memorial Bridge



Why is this project needed?

❖ Improved Access to Port of Wilmington

- Congestion and safety issues associated with trucks
- Future growth needs



Purpose of this Project

The purpose of the Cape Fear Skyway is to:

- ❖ Improve traffic flow and enhance freight movements beginning in the vicinity of US 17 and future I-140 in Brunswick County across the Cape Fear River to US 421 near the Port of Wilmington in New Hanover County.

Secondary benefits of the project would be to meet goals of local and regional plans, and provide reduced hurricane evacuation time.



How are options selected for further study?

- ❖ Do they meet the purpose and need of the project?
- ❖ How much will they cost?
- ❖ How do they affect the human and natural environments?



Human Environment

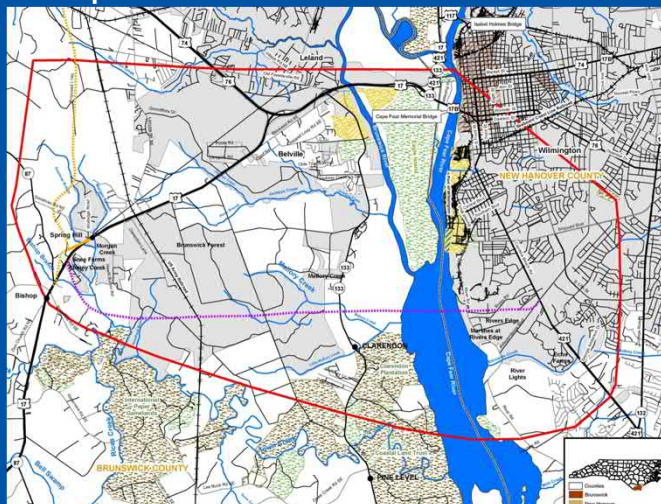




Natural Environment



Project Options





Project Options Under Consideration:

- ❖ No-Build
- ❖ Mass Transit
- ❖ Multi-Modal



Project Options Under Consideration:

- ❖ Transportation Systems Management
- ❖ Travel Demand Management





Project Options Under Consideration:

❖ Improvements to Existing Roadways



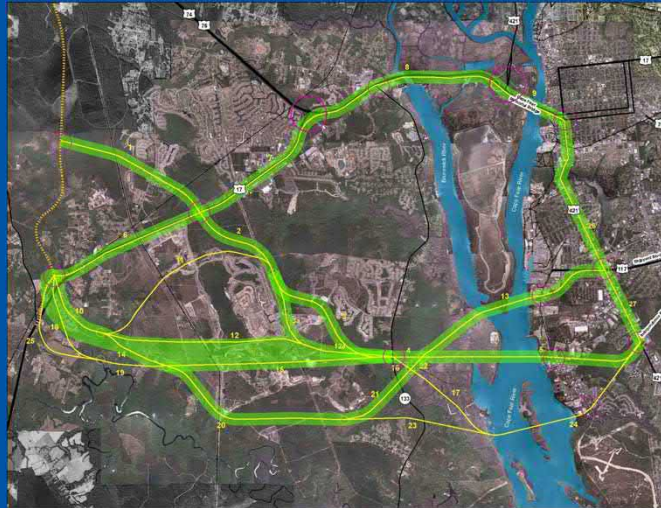
Project Options Under Consideration:

- ❖ New Location Roadways
- ❖ Hybrids of New Location Roadways and Existing Roadway Improvements

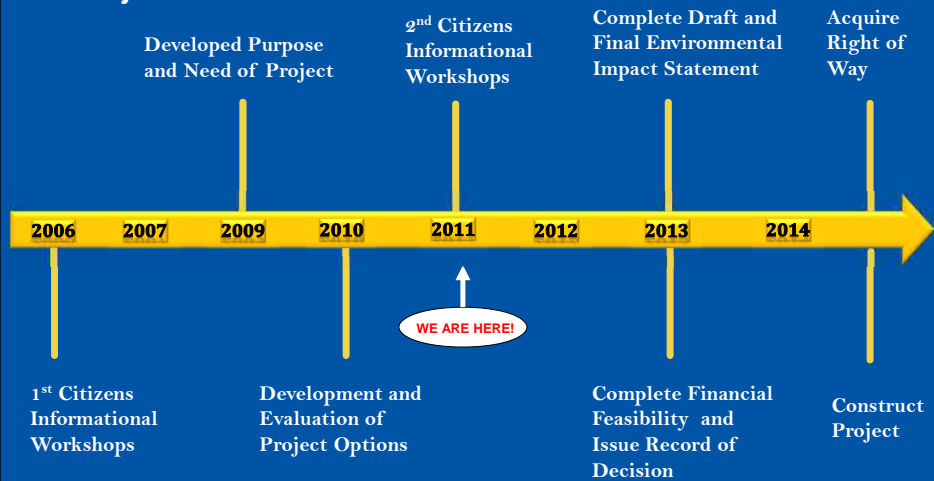




Project Options Under Consideration:



Project Timeline





What are the next steps in the process?


- ❖ Review comments
- ❖ Meet with agencies
- ❖ Revise/update project based upon input
- ❖ Determine options to be studied further
- ❖ Continue stakeholder coordination




Please make sure to.....

- ❖ Sign in and provide your contact information
- ❖ Pick up handouts
- ❖ Provide your feedback!



 **Cape Fear Skyway**
Bypass and New Interstate Corridor



COMMENT FORM

Contact Information (Please Print)

Name: _____ Email Address: _____

Mailing Address: _____

Please use the space below to include your comments or questions concerning the Cape Fear Skyway project. If you need additional space, use the back of this comment form or include your own letter.

1. Do you have any comments or questions regarding the purpose and need of the Cape Fear Skyway project?
2. Based on the maps shown at the workshop, which alternative do you believe would best meet the transportation need? Are there any other options you feel should be considered?
3. Do you have any comments or questions regarding the environmental or human impacts resulting from the project?
4. Please provide any additional comments or questions.

Please drop your completed form in the comment box at the workshop or return to one of the addresses provided below by email or mail.

<p>David Lafferty, ES ES&E 3800 Riverchase Park Dr., Suite 400 Raleigh, NC 27612 919.433.3446 david_lafferty@ncdot.gov</p>	<p>Michael J. Hines, ES ES&E 1114 Walnut Street, Suite 200 Raleigh, NC 27601-1218 919.973.7400 mhines@ncdot.gov</p>
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Additional contact information: 919.233.8333 • Email: caphw@ncdot.gov • Website: www.ncdot.gov/transportation/Cape_Fear



NORTH CAROLINA
Turnpike Authority








Cape Fear Skyway
Brunswick and New Hanover Counties

COMMENT FORM



Contact Information (Please Print)

Name: _____ Email Address: _____

Mailing Address: _____

Please use the space below to include your comments or questions concerning the Cape Fear Skyway project. If you need additional space, use the back of this comment form or include your own letter.

1. Do you have any comments or questions regarding the purpose and need of the Cape Fear Skyway project?
2. Based on the maps shown at the workshop, which alternative do you believe would best meet the transportation need? Are there any other options you feel should be considered?
3. Do you have any comments or questions regarding the environmental or human impacts resulting from the project?
4. Please provide any additional comments or questions.

Please drop your comment letter in the comment box at the workshop or return to one of the addresses provided below by **April 24, 2014**.

<p><small>Local Office: 107 10th Brunswick County, NC 28607 Brunswick, NC 27801 919-356-1300 cfaaf_turnpike@ncdot.gov</small></p>	<p><small>Project Office: 95 W. Turnpike Authority 1218 Main Street, 2nd Floor Raleigh, NC 27601-1718 919-737-3200 cfaaf@ncdot.gov</small></p>
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Toll-free hotline: 800-233-6315 • Email: caphaw@ncdot.gov • Website: www.ncturnpike.org/projects/Cape_Fear








NORTH CAROLINA
Turnpike Authority






Contact Information

www.ncturnpike.org/projects/Cape_Fear
capefear@ncdot.gov
1-800-233-6315



Looping Presentation for Workshop

13

N.C. Turnpike Authority Hosting Citizens Informational Workshops for Cape Fear Skyway Project



The Turnpike Authority is currently studying a project known as the Cape Fear Skyway, a potential toll road that would extend from U.S. 17 and future I-140 in Brunswick County to U.S. 421 in New Hanover County, including a high-rise bridge over the Cape Fear River.

Several potential corridors for the new roadway are being studied, along with the possibility of improving existing roads as an alternative to constructing the Skyway. The Turnpike Authority will also evaluate whether to develop the proposed project, in whole or in part, as a toll road. The project is estimated to cost between \$950 million and \$1.1 billion.

The central purpose of the Cape Fear Skyway would be to improve traffic flow and freight movements by connecting major routes in Brunswick and New Hanover Counties and to provide better access to the Port of Wilmington. It would also meet the goals of the North Carolina Strategic Highway Corridor Initiative, the North Carolina Intrastate System and the Wilmington Urban Area Metropolitan Planning Organization's Long Range Transportation Plan, all of which aim to promote regional and statewide mobility and economic vitality. Consistency with these plans will be considered during the evaluation of project alternatives.

In addition, the project would help reduce hurricane evacuation clearance time for residents and visitors as well as aid in emergency evacuation from Progress Energy's Brunswick Nuclear Plant in Southport.

The North Carolina Turnpike Authority will hold two Citizens Informational Workshops this month regarding the Cape Fear Skyway project. Representatives from the project study team will share information, answer questions and receive comments regarding the proposed project in an informal setting.

The same information will be available at each workshop. There will not be a formal presentation, and participants are encouraged to drop in at any time during the workshops. You may also submit comments or questions to the contacts listed on the back of this newsletter.

Workshop Locations & Times

Belville/Leland:

Tuesday, March 22nd, 5pm-8pm
Belville Elementary School
575 River Road (N.C. 133 SE)
Leland, NC 28412

Wilmington:

Thursday, March 24th, 5pm-8pm
Alderman Elementary School
2025 Independence Boulevard
Wilmington, NC 28403

Project Schedule

Draft Environmental Impact Statement	Spring 2013
Final Environmental Impact Statement	Fall 2013
Record of Decision	Winter 2013
Complete environmental planning with final alignment and design details	2013
Complete Financial Feasibility	2013

Project Purpose and Need

The primary needs for the Cape Fear Skyway project include:

- Additional Traffic Capacity
- Improved Access to the Port of Wilmington

The purpose of the proposed action is to improve traffic flow and enhance freight movements beginning in the vicinity of U.S. 17 and future I-140 in Brunswick County across the Cape Fear River to U.S. 421 near the Port of Wilmington in southern New Hanover County.

The Planning Process

In compliance with the National Environmental Policy Act (NEPA), the Turnpike Authority is preparing an Environmental Impact Statement (EIS) for the Cape Fear Skyway project. An EIS is a federally required document that describes the project's purpose and need, identifies project options and evaluates how each option may affect the surrounding community and natural environment.

Once a Draft EIS has been completed, the project options will be reviewed by the public, as well as local, state and federal agencies, and a preferred option will be selected. This option will then be developed further and a Final EIS will be prepared, followed by a Record of Decision, which gives final federal approval of the selected route.

Comments received from the public and government agencies play an important role in this process. In addition to hosting public workshops, the Turnpike Authority continues to work closely with federal, state and local officials on the development of this project.

Project Options Under Consideration

Several options are currently under consideration for the Cape Fear Skyway project. These include:

- **The No-Build or Do Nothing Option** - maintains road network as it is today
- **Transportation Demand Management Option** - improves activities that change traveler behavior, such as staggered work hours and ridesharing
- **Transportation Systems Management Option** - involves minor improvements such as new or improved signals, turn lanes, speed restrictions, etc.
- **Mass Transit/Multi-Modal Option** - includes adding bus or rail passenger services
- **Improve the Existing Roads** - improves existing U.S. 17 from the proposed I-140 /U.S. 17 interchange to U.S. 421 in New Hanover County, including improvements along U.S. 421
- **Construct New Road** - builds new road from the vicinity of U.S. 17 and future I-140 in Brunswick County to U.S. 421 in New Hanover County, including a bridge over the Cape Fear River
- **New Road/Improve Existing Road "Hybrid"** - includes combination of new roadway and improvements to existing U.S. 17

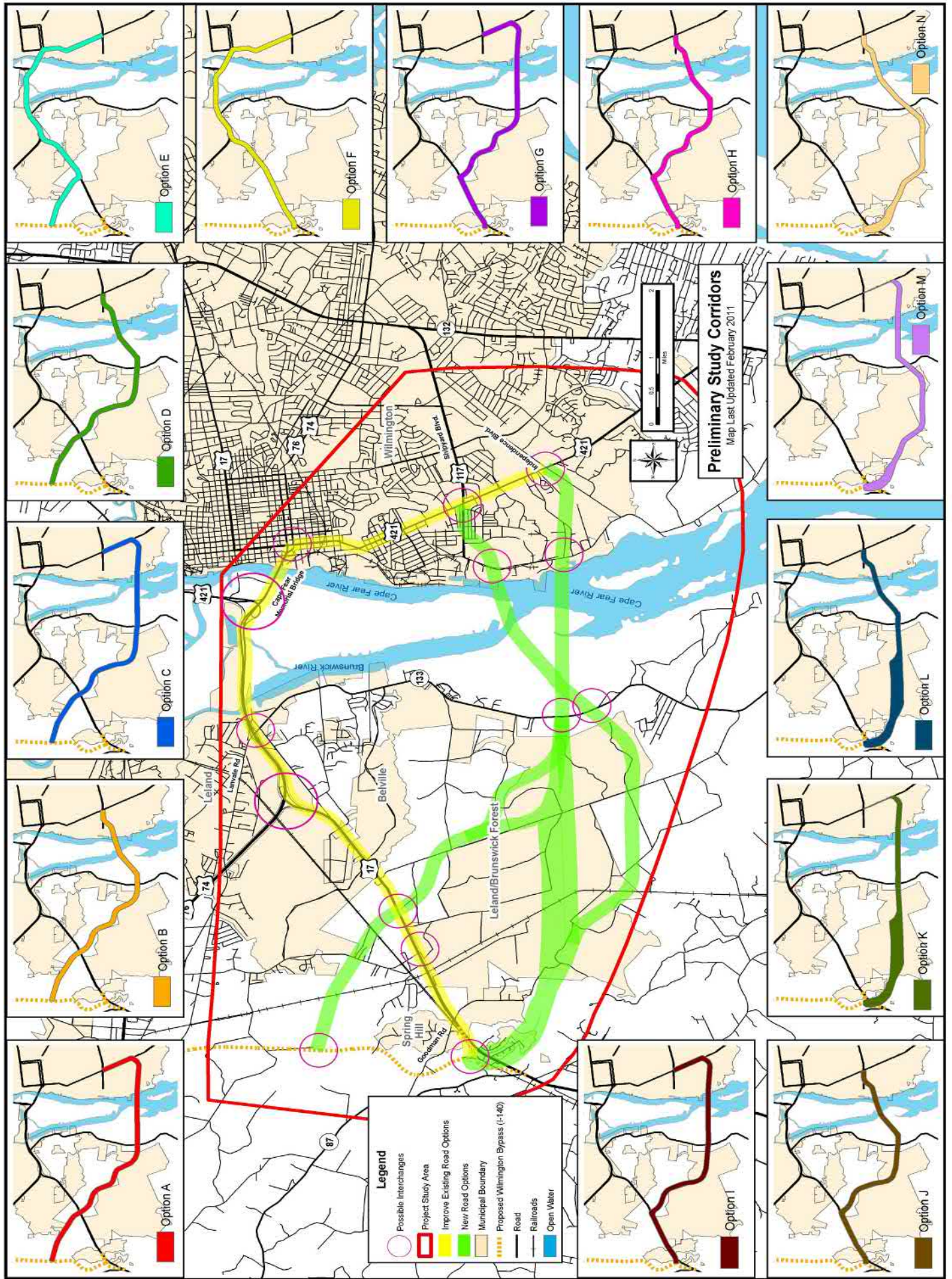
North Carolina Turnpike Authority

A business unit of the N.C. Department of Transportation, the Turnpike Authority is authorized to study, plan, develop and undertake preliminary design work on up to nine toll roads in the state. The Cape Fear Skyway is one of the Turnpike Authority's candidate toll roads.

Your input is important!

Your comments and recommendations will help the Turnpike Authority as it moves forward with developing this project. Sign up for our mailing list to receive future project newsletters, announcements and project updates.

For more information, visit www.ncturnpike.org/projects/Cape_Fear, call (800) 233-6315 toll free, or email capefear@ncturnpike.org



CHANGE SERVICE REQUESTED

Jennifer Harris, PE
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578



CITIZENS INFORMATIONAL WORKSHOPS CAPE FEAR SKYWAY MARCH 22nd & 24th, 2011

1

Tuesday, March 22nd, 2011, 5pm-8pm
Belville Elementary School
575 River Road (N.C. 133 SE)
Leland, NC 28412

2

Thursday, March 24th, 2011, 5pm-8pm
Alderman Elementary School
2025 Independence Boulevard
Wilmington, NC 28403

In compliance with the Americans with Disabilities Act (ADA), the Turnpike Authority will provide auxiliary aids and services for disabled persons who wish to participate in the Informational Workshops. To receive special services, please contact Jennifer Harris by phone (919) 571-3000 or email capefear@ncturnpike.org as soon as possible so that arrangements can be made.

For questions or comments about the project, to be added to the project mailing list, and/or to receive future newsletters please contact:

David Griffin, CEP
URS
1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
(919) 461-1446
david_griffin@urscorp.com

Jennifer Harris, PE
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578
(919) 571-3000
capefear@ncturnpike.org



MEMORANDUM

To: Project File

From: David Griffin

Date: April 6, 2011

Subject: Minutes of Meeting held with New National Gypsum Company, Inc.,
March 24, 2011 at 3:30 PM
North Carolina Turnpike Authority – Cape Fear Skyway Project
STIP U-4738

Attendees:

Samuel A. Schiffman, Esquire - New National Gypsum Company, Inc. (NGC), Counsel
Stephen L. LePage - New NGC, Wilmington Plant Manager
George Rountree - Rountree, Losee & Baldwin
Stephen D. Coggins - Rountree, Losee & Baldwin
Brian Berger - New Hanover County Commissioner
Mike Kozlosky – Wilmington Metropolitan Planning Organization (WMPO)
Allen Pope – NCDOT, Division 3
Mike Alford – NCDOT Board of Transportation
Jane Nelson – NCTA
David Griffin - URS
Mike Lindgren – URS

A meeting was held at the offices of Rountree, Losee & Baldwin in Wilmington, NC, at the request of New National Gypsum Company, Inc. (New NGC) and George Rountree, counsel for New NGC.

Following introductions led by George Rountree, the meeting was turned over to Sam Schiffman who provided an overview of the plant operations, financials and current status. Mr. Schiffman emphasized that while the plant was currently not operating due to the current economic conditions, New NGC spends about \$500,000 per year to maintain the equipment and overall operations in working order to prepare for re-start. The plant, when operational, employs about 70 people averaging an annual salary of \$35-\$40,000. The plant provides employment and tax revenue to the community and is an environmentally clean manufacturing plant. The Wilmington plant is one of 21 throughout the country; however, it is extremely unique because of the ability to bring raw material to plant via deep water vessels. The conveyor system leading to the berth facility on the Cape Fear River is a unique feature and was constructed through special use permits which are difficult to obtain. Moving the plant would render this conveyor system non-operational – it is irreplaceable. In 2006, this plant was in the top 10 manufacturing plants in the country. Mr. Schiffman provided meeting attendees with a company marketing brochure.



Minutes of March 24, 2011 New NGC Meeting

April 6, 2011

Page 2

Mr. Schiffman further stated that New NGC is in favor of the project, particularly the location/alignment in the vicinity of the plant because it would provide an excellent transportation facility for the 55 trucks that move to and from the plant daily when in operation. He added, however, that acquisition of the plant would be devastating as the plant would no longer have deep water access. Consequently, New NGC is asking the NCTA to reconsider an alignment other than that currently depicted in the Transportation Corridor Official Map for Project No. U-4738. New NGC proposed that the WMPO/NCTA revisit the design and either a shift to the north or south to avoid the plant altogether, or a shift slightly southward – essentially along the line of Sunnyvale Road, with redirecting the northern ramp to go around the New NGC facility. Mr. Schiffman concluded by offering a plant tour for anyone that wants to visit. The contact would be Stephen LePage.

Discussion ensued regarding the Transportation Official Corridor Map. Mike Kozlosky explained that the spirit of the corridor development and preservation was to minimize impacts to Stoney Creek, Brunswick Forest and Mallory Creek. Further discussion ensued regarding the status of corridor preservation. Mr. Kozlosky explained that Leland was the only entity to hold a Public Hearing and they voted the preservation down. Brunswick County and the City of Wilmington have adopted resolutions favoring the corridor, but they have not yet held Public Hearings. Further, Brunswick County can adopt corridor preservation overriding the Town of Leland.

David Griffin explained that there are two separate processes on-going that should not be confused. The corridor preservation process is being led by the WMPO. The NCTA is undertaking environmental studies in accordance with the National Environmental Policy Act, which mandates consideration of a full-range of alternatives. The two processes are independent of one another.

The meeting closed at 4:30 p.m.



Cape Fear Crossing Project
ATTN: Joanna Rocco
North Carolina Department of Transportation
C/O URS Corporation
1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560



Project Hotline – Línea Gratuita del Proyecto:
1-800-233-6315 (English/Español)

Project Manager—URS Corporation
Joanna Rocco
1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
capefear@ncdot.gov

Project Website – Página Web del Proyecto:
<http://www.ncdot.gov/projects/capefear/>

Project Manager—NCDOT
Jennifer Harris, P.E.
1548 Mail Service Center
Raleigh, NC 27699-1548
capefear@ncdot.gov

For more information about the project, please visit the project website, or contact Joanna Rocco (URS) using the toll-free hotline. Written correspondence can be provided to Joanna Rocco or Jennifer Harris.

CAPE FEAR CROSSING PROJECT

Brunswick and New Hanover Counties
STIP Project Number U-4738



NEWSLETTER ISSUE NO. 2—APRIL 2014—DETAILED STUDY ALTERNATIVES

ALTERNATIVES SELECTED FOR DETAILED STUDY

The North Carolina Department of Transportation (NCDOT) has selected 12 alternatives for detailed study. These alternatives include 2 alternatives that will upgrade existing US 17, 4 alternatives on new location, and 6 new location and upgrade existing “hybrid” alternatives. These alternatives were selected for their potential to fulfill the purpose of the project while minimizing impacts to the human and natural environment. The Detailed Study Alternatives are shown on the maps included with this newsletter (see page 3). The decision on the alternatives for detailed study was based on a rigorous comparison of a wide range of alternatives and involved input from the public, the environmental resource and regulatory agencies, and local governments.

Prior to selecting the Detailed Study Alternatives, NCDOT reviewed all public comments received from the March 2011 Citizens Informational Workshops and revised and refined the potential route options where feasible. Impacts for the potential route options were calculated for resources such as residential and business relocations, archaeological sites, historic properties, parks, churches, schools, buildings, hazardous materials sites, mitigation sites, floodplains, wetlands, streams, utilities, and threatened and endangered species.

The Cape Fear Crossing Project is being developed following the NEPA/Section 404 Merger Process, which is established to streamline project development and permitting. By following this process, local, state, and federal agency representatives meet to discuss the project and make decisions at major milestones during project development. The purpose of this is to allow for collaborative decision-making in order to avoid, minimize, or mitigate for impacts to the human and natural environment, while meeting the safety and mobility needs of the traveling public.

This Issue

- Pg. 1...Alternatives Selected for Detailed Study
- Pg. 2...Where the Alternatives are Located
- Pg. 2...What Happens Next
- Pg. 3...Detailed Study Alternatives

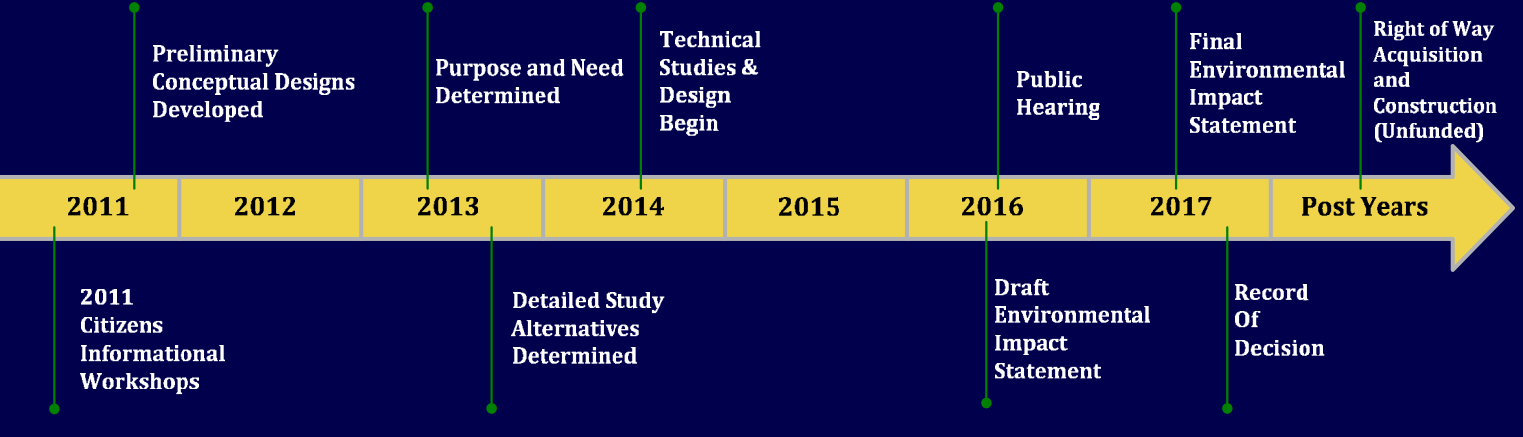
Why Is This Project Needed?

- The project is needed to address:
- Traffic Capacity Deficiencies
 - North Carolina Port Access

What Is the Project's Purpose?

To improve traffic flow and enhance freight movements beginning in the vicinity of US 17 and future I-140 in Brunswick County across the Cape Fear River to US 421 near the Port of Wilmington in southern New Hanover County.

PROJECT TIMELINE



WHERE ARE THE ALTERNATIVES LOCATED?

The 12 alternatives selected for detailed study are shown on the maps on page 3. Descriptions of each alternative are below. All alternatives will include a new bridge crossing of the Cape Fear River. Interchanges are proposed at I-140, US 17, NC 133, River Road, and US 421. For the upgrade existing alternative, and the hybrid alternatives that include upgrading existing US 17 for most of its length, interchanges are proposed at I-140, US 74/76, NC 133, and US 421.

New Location Alternatives (alternatives built on new location and do not use any existing roads):

- Alternative B:** This alternative begins at I-140 and crosses US 17, travels between the Brunswick Forest and Mallory Creek developments, and crosses the Cape Fear River to terminate at Shipyard Boulevard.
- Alternative C:** This alternative begins at I-140 and crosses US 17, travels parallel to Wire Road, and crosses the Cape Fear River to terminate at Independence Boulevard.
- Alternatives M Avoidance and N Avoidance:** These alternatives begin where I-140 ends on US 17, avoiding the Snee Farm/Stoney Creek subdivisions, travel south of Brunswick Forest, and cross the Cape Fear River to terminate at either Independence Boulevard (Alternative M Avoidance) or Shipyard Boulevard (Alternative N Avoidance).

“Hybrid” Alternatives (alternatives that include constructing new location roadway as well as upgrading existing US 17):

- Alternative G/Q:** These two alternatives begin where I-140 ends on US 17, upgrade existing US 17 for approximately two miles, then continue on new location between the Brunswick Forest and Mallory Creek developments, and cross the Cape Fear River to terminate at Independence Boulevard. Alternative G and Alternative Q follow the same alignment, but Alternative G will be designed as a freeway for its entire length, while Alternative Q will be designed as a standard widening along US 17 and a freeway on its new location portion.
- Alternative I/T:** These two alternatives begin where I-140 ends on US 17, upgrade existing US 17 for approximately two miles, then continue on new location parallel to Wire Road, and cross the Cape Fear River to terminate at Shipyard Boulevard. Alternative J and Alternative T follow the same alignment, but Alternative J will be designed as a freeway for its entire length, while Alternative T will be designed as a standard widening along US 17 and a freeway on its new location portion.
- Alternative V (freeway and standard widening option):** This alternative will include upgrading US 17 to the US 17/US 421 interchange, then travel south along Eagle Island on new location to terminate at US 421 just north of the Port of Wilmington. This alternative will have two options: it will be designed as a freeway with service roads and interchanges and as a standard widening with access remaining similar to how it is today.

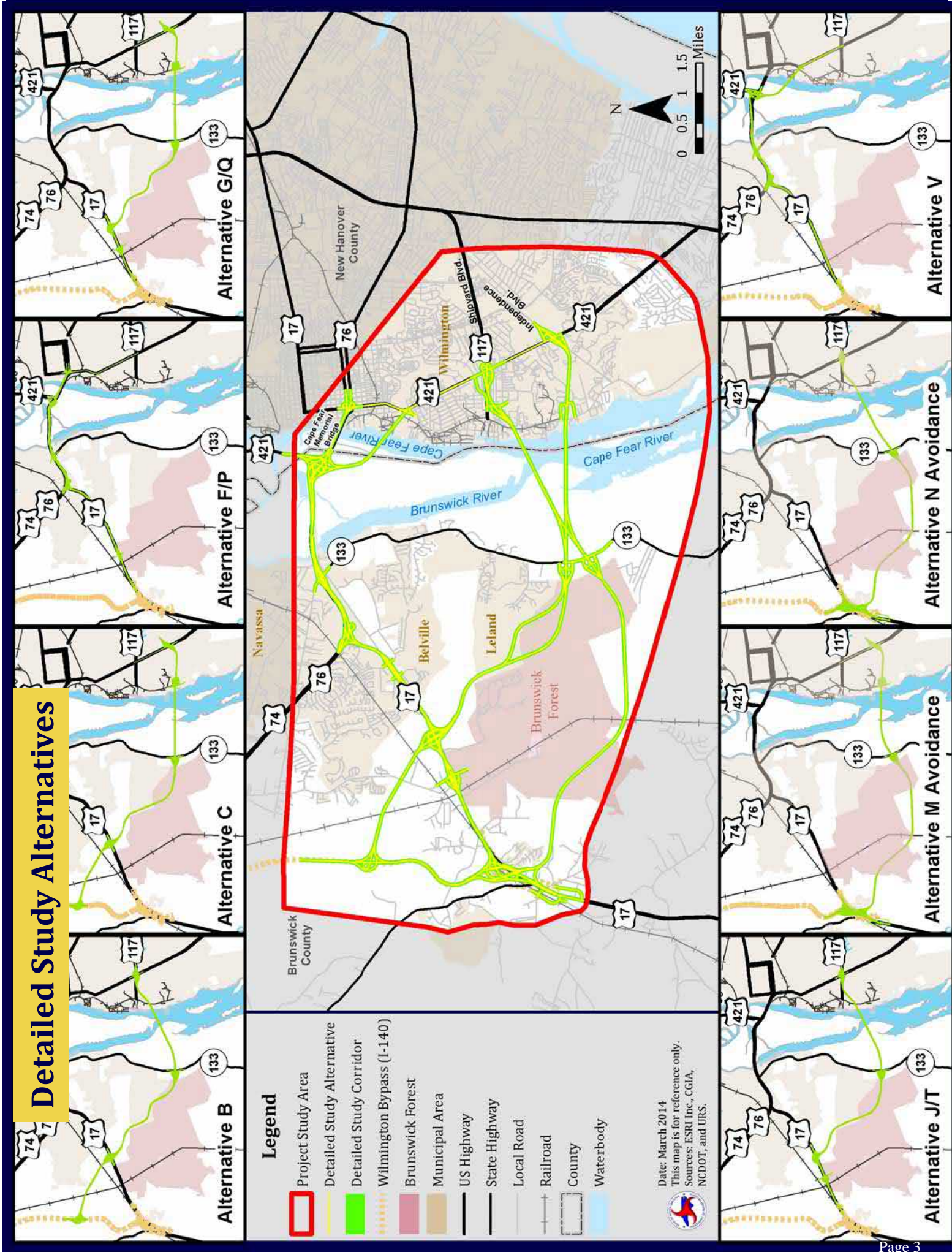
Upgrade Existing Alternative:

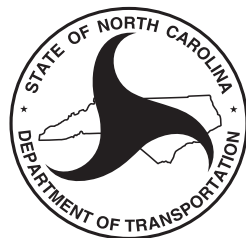
- Alternative F/P:** These two alternatives include upgrading US 17 from where I-140 ends on US 17, to US 421 in the City of Wilmington. The alternatives will be designed as a freeway (Alternative F) and as a standard widening (Alternative P).

WHAT HAPPENS NEXT?

The next step in the planning process will be to develop engineering designs for the Detailed Study Alternatives, which will include interchanges at the main roads, overpasses at the minor roads, and major service roads to provide access to properties adjacent to the Detailed Study Alternatives. Once the designs have been prepared, multiple technical studies will be prepared to identify the direct and indirect effects each Detailed Study Alternative will have on the human and natural environment. These technical studies include analysis of impacts to the community (socioeconomic impacts, environmental justice, etc.), cultural resources (historic properties and archaeological resources), natural resources (water quality, wetlands, streams, etc.), land use, air quality, and impacts from traffic noise, among others. The outcome of these studies will be summarized in the Draft Environmental Impact Statement, which will be used to help determine the Preferred Alternative for the project.

Once the Detailed Study Alternative designs and the Draft Environmental Impact Statement have been prepared, both will be available for review by the public and local, state and federal agencies. NCDOT will then hold a Public Hearing. The Public Hearing will include a formal presentation that will give the public the opportunity to ask questions, give formal statements, and comment on the project.





Cape Fear Crossing Project (STIP No. U-4738)

NCDOT

c/o AECOM

Attn: Joanna Rocco

701 Corporate Center Drive, Suite 475

Raleigh, NC 27607

Additional Information

Project Website

Sitio Web del Proyecto

www.ncdot.gov/projects/cape-fear-crossing

Project Hotline

Linea Gratuita del Proyecto

1.800.233.6315 (English/Español)

NCDOT Project Manager

Caitlyn Marks

5501 Barbados Blvd.

Castle Hayne, NC 28429

capefear@ncdot.gov

AECOM Project Manager

Joanna Rocco

701 Corporate Center Drive, Suite 475

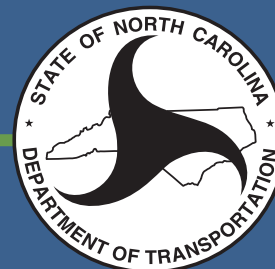
Raleigh, NC 27607

capefear@ncdot.gov

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November 2018

Issue No. 3



Cape Fear Crossing Project

State Transportation Improvement Program (STIP)

Project No. U-4738

Brunswick County
New Hanover County

Project Updates p. 1

What's Next? p. 1

Project Maps p. 2

Remaining Alternatives p. 3

Project Timeline p. 3

What is the Project?

A roadway project from U.S. 17 and I-140 in Brunswick County to U.S. 421 in southern New Hanover County, including a new crossing of the Cape Fear River, involving either improvements to existing roads or improvements to existing roads in combination with a new location roadway, depending on the alternative selected.

What is the Project's Purpose?

To improve traffic flow and enhance freight movements beginning in the vicinity of U.S. 17 and I-140 in Brunswick County across the Cape Fear River to U.S. 421 near the Port of Wilmington in southern New Hanover County.

Why is the Project Needed?

This project is needed to address:

- Traffic Capacity Deficiencies
- North Carolina Port Access

Project Assistance Hotline

1.800.233.6315

Project Updates

The Cape Fear Crossing project is being developed following the National Environmental Policy Act (NEPA)/Section 404 Merger Process, which is established to streamline project development and permitting. By following this process, local, state, and federal agency representatives (i.e. the "Merger Team") meet to discuss the project and make decisions at major milestones during project development. The purpose of this is to allow for collaborative decision-making in order to avoid, minimize, or mitigate for impacts to the human and natural environment, while meeting the safety and mobility needs of the traveling public.

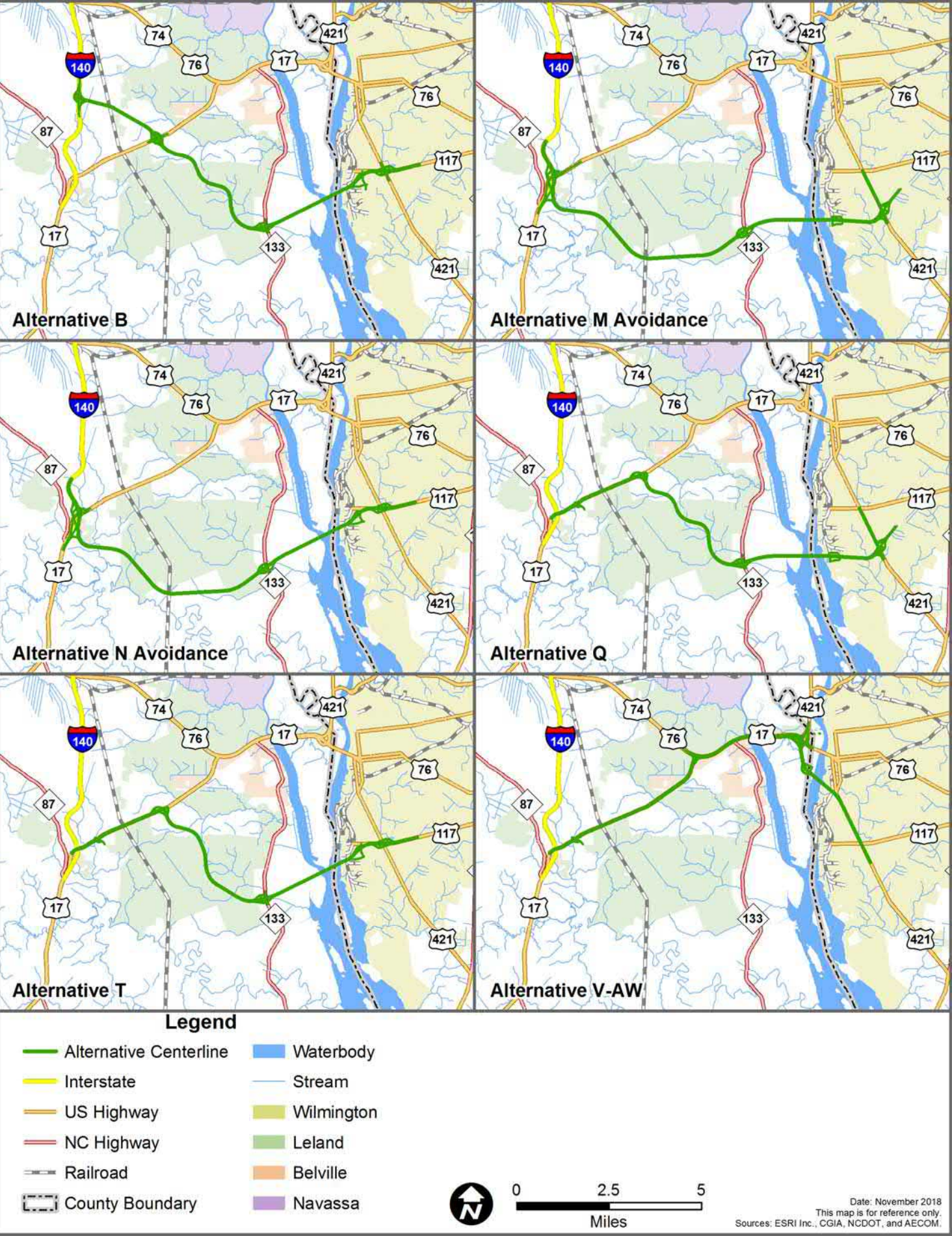
The Merger Team met in August 2017 to discuss eliminating several alternatives due to residential and business relocations, impacts to historic resources, and impacts to natural resources. The Merger Team concurred to eliminate Alternatives F, P, C, G, J, and V-F. The remaining alternatives for study, Alternatives B, M Avoidance, N Avoidance, Q, T, and V-AW, are shown on page 2 and described in detail on page 3.

What's Next?

A Draft Environmental Impact Statement (DEIS) is being prepared for the Cape Fear Crossing project. NEPA requires federal and state agencies to prepare environmental impact statements (EIS) for major federal actions that significantly affect the quality of the human environment. An EIS is a full disclosure document that details the process through which a transportation project was developed, includes consideration of a range of reasonable alternatives, analyzes the potential impacts resulting from the alternatives, and demonstrates compliance with other applicable environmental laws and executive orders. The DEIS will be made public when published, which is anticipated for early winter 2019. A public hearing will be held in spring 2019 to gather public input on the corridor designs presented in the DEIS. After the public hearings, the next step in the planning process will be to review and summarize the comments received on the DEIS and choose the Preferred Alternative. Your comments and recommendations will be part of the public record and will be considered when choosing the Preferred Alternative.

Connecting people, products and places safely and efficiently with customer focus, accountability and environmental sensitivity to enhance the economy and vitality of North Carolina.

Alternatives Map



Remaining Alternatives

The six remaining detailed study alternatives are shown in the maps on page 2. Descriptions of each alternative are below. All alternatives will include a new bridge crossing of the Cape Fear River. Upgrades to U.S. 421 from Independence Boulevard to Shipyard Boulevard are proposed as a six-lane arterial widening typical section.

Alternative B: This alternative begins at I-140 and crosses U.S. 17, travels between the Brunswick Forest and Mallory Creek developments, and crosses the Cape Fear River to end at Shipyard Boulevard. Alternative B is approximately 9.8 miles long and is proposed as a four-lane divided freeway for its entirety, meaning access will be controlled and no private driveways will be allowed to connect directly to the new roadway. Interchanges are located at I-140, U.S. 17, N.C. 133, and U.S. 421.

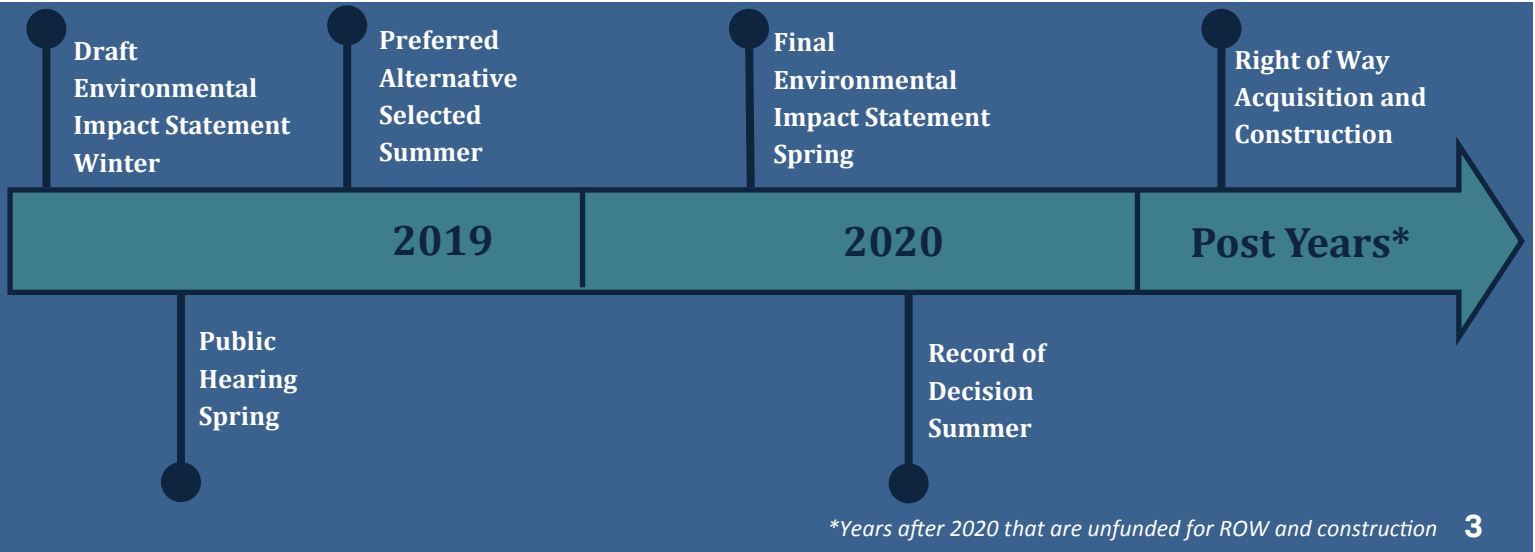
Alternatives M Avoidance and N Avoidance: These alternatives begin at the I-140/U.S. 17 interchange and travel south of Brunswick Forest, then cross the Cape Fear River to end at U.S. 421. Alternative M Avoidance is approximately 11.3 miles long and includes an interchange at Independence Boulevard and U.S. 421, and upgrades U.S. 421 north to Shipyard Boulevard. Alternative N Avoidance is approximately 9.9 miles long and includes an interchange at Shipyard Boulevard and U.S. 421. Both alternatives are proposed as a four-lane divided freeway for the entirety of the alternative, meaning access will be controlled and no private driveways will be allowed to connect directly to the new roadway. Interchanges are located at I-140/U.S. 17, N.C. 133, and U.S. 421.

Alternative Q: This alternative begins at the I-140/U.S. 17 interchange, upgrades existing U.S. 17 for approximately 2 miles, then continues on new location between the Brunswick Forest and Mallory Creek developments, crosses the Cape Fear River to connect at Independence Boulevard, and upgrades U.S. 421 from Independence Boulevard to Shipyard Boulevard, where it ends. Alternative Q is approximately 11.4 miles long and is proposed as a six-lane arterial widening typical section on U.S. 17 and a four-lane freeway typical section on new location. Interchanges are located at U.S. 17, NC 133, and U.S. 421.

Alternative T: This alternative begins at the I-140/U.S. 17 interchange, upgrading existing U.S. 17 for approximately 2 miles, then continues on new location parallel to Wire Road and crosses the Cape Fear River to end at Shipyard Boulevard. Alternative T is approximately 10 miles long and is proposed as a six-lane arterial widening typical section on U.S. 17 and a four-lane freeway typical section on new location. Interchanges are located at U.S. 17, N.C. 133, and U.S. 421.

Alternative V-AW: This alternative begins at the I-140/U.S. 17 interchange, upgrading U.S. 17 to the U.S. 17/U.S. 421 interchange, then travels south along Eagle Island on new location, and crosses the Cape Fear River to end at U.S. 421 and Shipyard Boulevard. Alternative V-AW is approximately 20.2 miles long and is proposed as a six-lane arterial widening typical section on U.S. 17 and a four-lane freeway typical section on new location. Interchanges are located at U.S. 74/76/17, Battleship Road, and U.S. 421.

Project Timeline



APPENDIX E: AGENCY RECORDS OF MEETINGS

Agency Meetings

Date	Meeting Type	Attendees	Location	Purpose
11/29/2005	Scoping Meeting	NCTA: Gail Grimes HNTB: Henry Liles, Whit Webb, Craig Deal, Anne Redmond, Chuck Johnson, Spencer Franklin, Tracy Roberts URS: David Griffin, Jeff Weisner, Peter Trencansky MAB: Bill Martin, John Ponder	HNTB Raleigh Office	To provide general coordination and scoping of the project. The contractual issues/invoices, schedule, merger process, scoping efforts, traffic forecasting, and data sharing/collection were covered.
01/13/2006	Scoping Meeting	NCTA: Gail Grimes USACE: Dave Timpy USEPA: Chris Militscher NCDCCR - SHPO: Sarah McBride NCDMF: Fritz Rhode NCDENR: Steve Sollod, Brian Wrenn NCDOT: Allen Pope, Parks Icenhour, James Harris, Neal Strickland, David Harris, Mark Staley, Lori Cove, David Wasserman Cape Fear RPO: Don Eggert City of Southport: David Emilita, Norman Holden City of Wilmington/MPO: Joshua Mello HNTB: Tracy Roberts, Whit Webb HNTB/NCTA GEC: Anne Redmond EcoScience: Jerry McCrain, Layna Thrush URS: Eleni Iverson, Jeff Weisner, Peter Trencansky, Peggy Hayes	NCDOT Transportation Building Board Room (Room 150)	To identify important issues related to the proposed action that should be considered during the study process, and to provide stakeholders with the opportunity to discuss these issues with the project study team.

Agency Meetings

Date	Meeting Type	Attendees	Location	Purpose
05/25/2006	New Hanover City Parks Department Coordination Meeting	City of Wilmington Parks, Rec and Downtown: Gary Shell City of Wilmington Planning Department: Mike Kozlosky City of Wilmington Finance Department: Steve Bridges URS: Jeff Weisner, David Griffin, Marty Peate	Unknown	To collect land use information on properties within the project study area that are owned or anticipated to be purchased by the City of Wilmington.
06/08/2006	USACE Meeting	USACE Wilmington: Howard Varnam, Richard Kimmel, Bob Keistler, William Adams, Frank Yelverton, Jimmy Hargrove, Dave Timpy, Noel Clay, Scott McLendon HNTB: Craig Deal, Tracy Roberts, Paul Barber NCDOT: Lonnie Brooks URS: David Griffin, Kiersten R. Giugno	USACE Wilmington Office	To discuss navigational requirements associated with the proposed Cape Fear Skyway.
06/22/2006	Brunswick County Planning Coordination Meeting	Brunswick County: Leslie Bell URS: Jeff Weisner, Shannon Cox	Brunswick County Planning Department Office	To begin coordination with Brunswick County's Planning Department and to identify any concerns or input that should be included in the CIA being conducted for the Cape Fear Skyway project.
06/22/2006	New Hanover County Parks Coordination Meeting	New Hanover County Parks Department: Neal Lewis, Sam Burgess URS: Jeff Weisner, Shannon Cox	New Hanover County Parks Department office	To begin a discussion of any potential Section 4(f) issues that might be associated with the Cape Fear Skyway project and to identify any properties planned for public use.
05/20/2009	NCCLT Meeting	NCCLT: Janice Allen HNTB: Tracy Roberts URS: David Griffin, Joanna Harrington	New Bern office of the NCCLT	To discuss the Cape Fear Skyway project and NCCLT properties that are within or near the study area.

Agency Meetings

Date	Meeting Type	Attendees	Location	Purpose
08/19/2009	Purpose and Need Meeting	FHWA: Rob Ayers, George Hoops NCDOT: Shane York WMPO: Mike Kozlosky NCTA: Jennifer Harris HNTB/NCTA: Tracy Roberts URS: David Griffin, Peter Trencansky	FHWA offices	To discuss the purpose of and need for the Cape Fear Skyway project.
08/27/2009	Progress Energy Meeting	PEC: Steve Wilson, Cooper Dwiggin, Buzz Bryson, Bob Wojnarowski, Baxter Matheson NCSPA: Mark Blake USCG: LT Chris Vargo WMPO: Mike Kozlosky USACE: Tom Wallace Yang Ming America: Jared Hollemon Wilmington-Cape Fear River Pilots Association: William Heu NCDENR: Cameron Weaver NCDOT: Patrick Riddle, Chad Kimes NCTA: Tracy Roberts URS: David Griffin, Joanna Harrington	PEC, Leland, NC	To discuss the dual circuit transmission lines that currently cross the Cape Fear River just south of the NCSPA Port of Wilmington.
09/14/2009	Purpose and Need Meeting	FHWA: Rob Ayers, George Hoops NCDOT: Shane York WMPO: Mike Kozlosky NCTA: Jennifer Harris HNTB/NCTA: Tracy Roberts URS: David Griffin, Peter Trencansky, Joanna Harrington	FHWA offices	To continue discussions on the purpose of and need for the Cape Fear Skyway project.

Agency Meetings

Date	Meeting Type	Attendees	Location	Purpose
11/02/2009	Corridor Protection Meeting	NCTA: Steve DeWitt, Jennifer Harris WMPO: Mike Kozlosky HNTB: Tracy Roberts URS: David Griffin, Peter Trencansky, Joanna Harrington	NCTA	To discuss corridor preservation for the Cape Fear Skyway project.
02/16/2010	TEAC Meeting	FHWA: George Hoops USEPA: Chris Militscher USACE: Mickey Sugg, Brad Shaver NCDENR-DWQ: David Wainwright, Brian Wrenn NMFS: Ron Sechler USFWS: Gary Jordan NCWRC: Travis Wilson NCDCM: Steve Sollod WMPO: Mike Kozlosky NCDOT: Steve Gurganus, Benjetta Johnson, Niles Surti, Dewayne Skyes, Missy Pair NCDENR: Amy Simes NCTA: Jennifer Harris HNTB: Tracy Roberts ESI: Kevin Markham Lochner: Steve Browde Mulkey: Wendee Smith URS: David Griffin, Kim Leight	NCTA Board Room	To present a brief project history, an overview of the Draft Section 6002 Coordination Plan, the project study area, Draft Purpose and Need Statement, the alternatives screening methodology, preliminary alternative concepts, and to solicit comments and/or issues of concern from TEAC members in this regard.

Agency Meetings

Date	Meeting Type	Attendees	Location	Purpose
03/29/2010	Northern Alternative Meeting	City of Wilmington: Bill Saffo Brunswick County: Bill Sue WMPO: Mike Kozlosky, Doky Saffo Cameron Management: Bill Cameron Brunswick Forest: Jeff Earp Stevens Fine Homes: Craig Stevens NCTA: Jennifer Harris HNTB: Jeff Dayton URS: Jeff Hext, Joanna Harrington	City Hall in Wilmington, NC	To discuss the northern alignment in Brunswick County for corridor preservation of the Cape Fear Skyway project.
04/12/2010	TEAC Meeting	FHWA: George Hoops USACE: Scott McLendon, Brad Shaver NCDENR-DWQ: David Wainwright NMFS: Fritz Rohde USFWS: Gary Jordan NCWRC: Travis Wilson NCDCM: Steve Sollod WMPO: Mike Kozlosky NCDOT: Steve Gurganus, Lonnie Brooks, Dewayne Skyes NCDENR-DMF: Jessie O'Neil NCDENR-DCM: David Lane NCSA: Stephanie Ayers, Mark Blake NCTA: Jennifer Harris HNTB: Tracy Roberts, Jeff Dayton ESI: Kevin Markham Lochner: Steve Browde URS: David Griffin, Joanna Harrington	NCTA Board Room	To discuss comments received from the agencies on the draft Section 6002 Coordination Plan, draft Project Study Area, draft Purpose and Need Statement, and to discuss and receive comments on the draft alternative screening methodology and alternative concepts, and to solicit comments and/or issues of concern from participating agencies in this regard.

Agency Meetings

Date	Meeting Type	Attendees	Location	Purpose
09/08/2010	TEAC Meeting	FHWA: George Hoops USACE: Eric Alsmeyer USFWS: Gary Jordan NCWRC: Travis Wilson NCDCR: Deloris Hall NCDOT: Doug Taylor NCTA: Jennifer Harris HNTB: Christy Shumate, John Burris URS: Joanna Rocco, David Griffin Lochner: Roy Bruce, Brian Eason, Kristin Maseman Mulkey: Wendee Smith	NCTA Board Room	To continue discussion on purpose and need statement and alternatives screening.

Agency Meetings

Date	Meeting Type	Attendees	Location	Purpose
12/07/2010	TEAC Meeting	FHWA: George Hoops USACE: Brad Shaver NCDENR-DWQ: David Wainwright, Amy Simes NMFS: Fritz Rohde USFWS: Gary Jordan NCWRC: Travis Wilson NCDCM: Steve Sollod USEPA: Chris Militscher NCDMF: Jessie O’Neil WMPO: Mike Kozlosky, Tara Murphy SHPO: Renee Gledhill-Earley NCSPA: Stephanie Ayers NCDOT: Doug Taylor, Tony Houser, Tristram Ford, Missy Pair, Regina Page, Lonnie Brooks NCTA: Jennifer Harris HNTB: John Burris ESI: Kevin Markham URS: David Griffin, Peter Trencansky, Susan Westberry, Joanna Rocco	NCTA Board Room	To discuss comments received from the agencies on the draft alternatives screening, and the results of the first and second tier of alternatives screening, and to solicit comments and/or issues of concern from participating and cooperating agencies in this regard.

Agency Meetings

Date	Meeting Type	Attendees	Location	Purpose
01/20/2011	TEAC Meeting	FHWA: George Hoops USACE: Brad Shaver, Scott McLendon NCDENR-DWQ: David Wainwright, Amy Simes NMFS: Fritz Rohde USFWS: Gary Jordan NCWRC: Travis Wilson NCDCM: Steve Sollod USEPA: Chris Militscher NCDMF: Jessie O'Neil WMPO: Mike Kozlosky NCSPA: Stephanie Ayers NCDOT: Doug Taylor, Lonnie Brooks, Herman Huang, Michael Bright NCTA: Jennifer Harris HNTB: John Burris, Spencer Franklin ESI: Kevin Markham Lochner: Steve Browde URS: David Griffin, Peter Trencansky, Susan Westberry, Joanna Rocco	NCTA Board Room	To discuss comments received from the agencies on the draft alternatives screening, and the results of the first and second tier of alternatives screening, and to solicit comments and/or issues of concern from participating and cooperating agencies in this regard.

Agency Meetings

Date	Meeting Type	Attendees	Location	Purpose
03/22/2011	Local Officials Meeting	<p>Town of Leland: Walter Futch, Brenda Bozeman, Martha Currie</p> <p>Town of Northwest: James Knox</p> <p>City of Southport: Ken Karn</p> <p>Brunswick County: Leslie Bell, Marty Cooke, Brenda Clemmons, Steve Stone, Marty Lawing</p> <p>Town of Navassa: Eulis Willis</p> <p>WMPO: Tara Murphy</p> <p>Village of Bald Head Island: Calvin Peck</p> <p>City of Boiling Spring Lakes: Joan Kinney, David Lewis</p> <p>Brunswick Forest: Jeff Earp</p> <p>NCDOT: Allen Pope</p> <p>NCTA: Steve DeWitt, Jennifer Harris</p> <p>HNTB: Spencer Franklin, John Burris</p> <p>URS: David Griffin, Peter Trencansky, Susan Westberry, Mike Lindgren, Joanna Rocco, Jack Batson, Martha Futch</p>	Brunswick County Government Complex	To give local officials a chance to see the materials to be presented to the public at the evening's citizens informational workshop.

Agency Meetings

Date	Meeting Type	Attendees	Location	Purpose
03/24/2011	Local Officials Meeting	WMPO: Mike Kozlosky City of Wilmington: Ken O’Grady, Tony Caudle, Laura Padgett, Sterling Cheatham New Hanover County: Lieutenant H.G. Adams, Jennifer MacNeish, Sheila Schult Town of Leland: Walter Futch NCDOT: Allen Pope NC Board of Transportation: Mike Alford NCTA: Steve DeWitt, Jennifer Harris HNTB: Spencer Franklin, John Burris URS: David Griffin, Peter Trencansky, Susan Westberry, Mike Lindgren, Joanna Rocco, Martha Futch	City Hall in Wilmington, NC	To give local officials a chance to see the materials to be presented to the public at the evening’s citizens informational workshop
05/03/2011	Historic Resources Consultation Meeting	SHPO: Renee Gledhill-Earley NCDOT: Mary Pope Furr URS: Joanna Rocco, Marvin Brown	Project Development & Environmental Analysis branch of the NCDOT	To determine what the historic area of potential effects (APE) should be for the project and what resources should be further inventoried and assessed at the intensive level and included in a historic architectural survey report.

Agency Meetings

Date	Meeting Type	Attendees	Location	Purpose
05/18/2011	TEAC Meeting	FHWA: George Hoops USACE: Brad Shaver NCDENR-DWQ: David Wainwright NMFS: Fritz Rohde NCDOT: Steve Sollod USEPA: Chris Militscher NCDENR-DMF: Jessi Baker SHPO: Renee Gledhill-Earley WMPO: Tara Murphy NCSA: Stephanie Ayers NCDOT: Lonnie Brooks, Tristram Ford, Mathew Potter NCTA: Jennifer Harris HNTB: John Burris ESI: Kevin Markham URS: David Griffin, Peter Trencansky, Susan Westberry, Joanna Rocco	NCTA Board Room	To review comments received from the public at the workshops held in March, the results of the third tier of alternatives screening, and preliminary recommendations for detailed study alternatives, and to solicit comments and/or Issues of concern from participating and cooperating agencies in this regard.
03/18/2013	WMPO TAC Workgroup Meeting	City of Wilmington: Laura Padgett, Tyler Newman Town of Belville: Joe Breault Town of Wrightsville Beach: Bill Sisson Town of Leland: Pat Batleman NCDOT: Karen Fussell, Jennifer Harris URS: David Griffin, Joanna Rocco, Susan Westberry HNTB: Tracy Roberts WMPO: Mike Kozlosky	305 Chestnut Street, Wilmington, NC	To discuss the subject project and coordination between NCDOT and the WMPO TAC Cape Fear Crossing Workgroup.

Agency Meetings

Date	Meeting Type	Attendees	Location	Purpose
05/13/2013	WMPO TAC Cape Fear Crossing Workgroup	City of Wilmington: Laura Padgett, Tyler Newman Town of Belville: Joe Breault Town of Wrightsville Beach: Bill Sisson Town of Leland: Pat Batleman NCDOT: Karen Fussell URS: David Griffin, Joanna Rocco, Susan Westberry HNTB: Tracy Roberts WMPO: Mike Kozlosky	305 Chestnut Street, Wilmington, NC	To discuss the subject project, project updates, and previous work by NCDOT on the bridge types and locations for crossing the Cape Fear River.

Agency Meetings

Date	Meeting Type	Attendees	Location	Purpose
06/13/2013	NEPA/Section 404 Merger Meeting: CP 1	FHWA: Ron Lucas, Clarence Coleman USACE: Brad Shaver USFWS: Gary Jordan NCDENR-DWQ: Mason Herndon NMFS: Pace Wilber NCDCM: Steve Sollod USEPA: Chris Militischer NCWRC: Travis Wilson NCDENR-DMF: Jessi Baker SHPO: Renee Gledhill-Earley WMPO: Mike Kozlosky NCSPA: Stephanie Ayers Town of Leland: Pat Batleman NCDOT: Allen Pope, Karen Fussell, Patrick Riddle, Greg Thorpe, Chris Rivenbark, Jennifer Harris, Paul Atkinson, Gary Lovering, Dayton Martin, Herman Huang, Adam Snipes, Benjetta Johnson, Elizabeth Lusk, Phil Harris, Mark Staley, Nora McCann, Kevin Fischer HNTB: Tracy Roberts URS: David Griffin, Ed Edens, Joanna Rocco, Susan Westberry	NCDOT Century Building	To review the Purpose and Need Statement and project study area with the merger team to achieve CP 1. The project team also reviewed the Draft CP 2 information including the methodology for screening alternatives and the preliminary alternatives that will be recommended as detailed study alternatives.

Agency Meetings

Date	Meeting Type	Attendees	Location	Purpose
07/26/2013	WMPO TAC Cape Fear Crossing Workgroup	City of Wilmington: Laura Padgett Town of Wrightsville Beach: Bill Sisson Town of Belville: Joe Breault Town of Leland: Pat Batleman, Brenda Bozeman NCDOT: Karen Fussell, Jennifer Harris, Patrick Riddle WMPO: Suraiya Rashid HNTB: Tracy Roberts URS: Joanna Rocco Port City Daily: Jonathan Spiers	305 Chestnut Street, Wilmington, NC	To discuss the subject project, project updates, and the project team's approach on screening alternatives for detailed study in the DEIS.
09/11/2013	MPO Model Meeting	FHWA: Ron Lucas NCDOT: Deborah Hutchings, James Upchurch, Nora McCann, Tae-Gyu Kim, Patrick Riddle WMPO: Mike Kozlosky HNTB: Tracy Roberts, Bradley Reynolds, Jennifer Zhan URS: Joanna Rocco, John Burris	NCDOT Transportation Building 1 South Wilmington Street, Raleigh	To discuss the WMPO TDM Model.

Agency Meetings

Date	Meeting Type	Attendees	Location	Purpose
09/18/2013	NEPA/Section 404 Merger Meeting: CP 2	FHWA: Ron Lucas, Jill Stark USACE: Brad Shaver USFWS: Gary Jordan USCG: Terry Knowles NCDENR-DWR: Mason Herndon NMFS: Fritz Rhode USEPA: Chris Militscher NCWRC: Travis Wilson NCDENR: Amy Simes NCDENR-DCM: Jessi Baker, Stephen Lane, Steve Sollod SHPO: Renee Gledhill-Earley WMPO: Mike Kozlosky Cape Fear RPO: Allen Sirken NCSPA: Stephanie Ayers Town of Leland: Robert Waring NCDOT: Karen Fussell, Patrick Riddle, Chris Rivenbark, Jennifer Harris, Brook Anderson, Gary Lovering, Drew Joyner, Adam Snipes, David Rhodes, Benjetta Johnson, Nick Lineberger, James Upchurch, Nora McCann, Kevin Fischer, Shane York Mulkey: Wendee Smith, Mark Mickley URS: John Burris, David Griffin, Ed Edens, Joanna Rocco, Susan Westberry	NCDOT Century Center	To review the detailed study alternatives carried forward with the merger team to achieve CP 2.

Agency Meetings

Date	Meeting Type	Attendees	Location	Purpose
11/20/2013	NCSPA Rail Meeting	NCSPA: Stephanie Ayers, Mark Blake, Jeff Miles WMPO: Mike Kozlosky NCDOT: Patrick Riddle, Jennifer Harris HNTB: Tracy Roberts URS: David Griffin, Tara Murphy, Joanna Rocco	NCSPA – 2202 Burnett Boulevard, Wilmington NC	To discuss a potential project alternative requested by Chris Militscher of the USEPA at the September 18, 2013 NEPA/Section 404 Merger Meeting.
12/12/2013	NEPA/Section 404 Merger Meeting: CP 2 follow-up	FHWA: Ron Lucas USACE: Brad Shaver USFWS: Gary Jordan NCDENR-DWR: Mason Herndon NMFS: Fritz Rhode USEPA: Chris Militscher NCWRC: Travis Wilson NCDENR: Amy Simes, Steve Sollod SHPO: Renee Gledhill-Earley WMPO: Mike Kozlosky NCDOT: Karen Fussell, Jennifer Harris, Brook Anderson, Tristram Ford, Adam Snipes, David Rhodes, Phil Harris, Tyler Stanton, Mark Staley, Cheryl Evans, Nick Lineberger, Susan Lancaster, Nora McCann, Terry Clelland, Shane York, Dayton Martin HNTB: Tracy Roberts Mulkey: Wendee Smith, Mark Mickley URS: John Burris, Ed Edens, Nick Ramirez, Joanna Rocco, Susan Westberry	NCDOT Century Center	To re-sign the CP 1 form based on the agreement to revise the project study area and to review revised detailed study alternatives carried forward recommendations as a follow-up to the September 2013 CP 2 meeting.

Agency Meetings

Date	Meeting Type	Attendees	Location	Purpose
05/29/2014	WMPO TAC Cape Fear Crossing Workgroup Meeting	City of Wilmington: Laura Padgett Town of Carolina Beach: Gary Doetsch Town of Belville: Joe Breault WMPO: Corey Knight, Mike Kozlosky, Suraiya Rashid Town of Leland: Pat Batleman NCSPA: Stephanie Ayers NCDOT: Karen Fussell, Jennifer Harris, Jackson Provost, Patrick Riddle HNTB: Tracy Roberts URS: John Burris, David Griffin, Joanna Rocco, Susan Westberry	305 Chestnut Street, Wilmington, NC	To discuss various aspects of the subject project, as well as give workgroup members an update on the project since the last meeting held in July 2013.
12/08/2014	WMPO Workgroup Meeting	City of Wilmington: Laura Padgett Town of Carolina Beach: Gary Doetsch Town of Belville: Joe Breault WMPO: Mike Kozlosky, Suraiya Rashid Town of Leland: Pat Batleman, Don Messer NCDOT: Karen Fussell, Jennifer Harris, Patrick Riddle URS: John Burris, Ed Edens, David Griffin, Joanna Rocco	305 Chestnut Street, Wilmington, NC	To discuss various aspects of the subject project, as well as give workgroup members an update on the project since the last meeting held in May 2014.
11/12/2015	NCSPA Meeting	NCSPA: Stephanie Ayers, Laura Blair, Tolga Cankurtaran NCDOT: Charles Cox HNTB: Tracy Roberts AECOM: Joanna Rocco	NCSPA Maritime Building Business Development Conference Room, Wilmington NC	To discuss expansion plans at the Port of Wilmington, the proposed alternative being evaluated by the project team at the request of the WMPO, and to introduce Charles Cox as the new NCDOT PDEA project manager of the Cape Fear Crossing project.

Agency Meetings

Date	Meeting Type	Attendees	Location	Purpose
01/08/2016	WMPO and Division Meeting	NCDOT: Patrick Riddle, Charles Cox WMPO: Mike Kozlosky HNTB: Tracy Roberts AECOM: Joanna Rocco, Celia Foushee	Conference Call	To close the loop on the draft WMPO memorandum detailing the project team's analysis of the alignment requested by the WMPO near the Port of Wilmington, as well as discuss use of the NCSPA's northern property utilized in the draft functional designs for Alternative V.
02/05/2016	NCDOT Division Meeting	NCSPA and Project Team	Conference Call	To discuss NCDOT STIP project U-4738, Cape Fear Crossing. Two options north of the NCSPA vacant property were discussed, as well as two options south of the vacant parcels.
12/08/2016	Section 106 Effects Meeting	HPO: Renee Gledhill-Earley FHWA: Donnie Brew NCDOT: Mary Pope Furr, David Hinnant, Jay McInnis, Samantha Matta HNTB: Tracy Roberts, Adam Archual AECOM: Neil Dean, Celia Foushee, Joanna Rocco	NCDOT Century Center	To discuss with the SHPO and FHWA the effects of the proposed Cape Fear Crossing project on the historic resources within the study area.
03/07/2017	NCDOT WMPO Meeting	WMPO: Mike Kozlosky NCDOT: Jay McInnis HNTB: Tracy Roberts AECOM: Celia Foushee, Joanna Rocco	NCDOT Century Center	To discuss with the WMPO the upcoming TAC meeting to be held in Wilmington on March 29, 2017 and the project status.

Agency Meetings

Date	Meeting Type	Attendees	Location	Purpose
03/27/2017	HPO Effects Follow-up Field Meeting	HPO: Renee Gledhill-Earley NCDOT: Mary Pope Furr, Jay McInnis AECOM: Celia Foushee, Joanna Rocco, Neil Dean	Wilmington, NC	To discuss with the SHPO the effects determination of the proposed Cape Fear Crossing project on five historic resources within the study area: USS North Carolina Battleship for Alternatives F and P, Wilmington Historic District for Alternatives V-F and V-AW, Sunset Park for Alternatives F, P, V-AW, and V-F, Wilmington National Guard Armory for Alternatives F, P, V-AW, and V-F, and Hanover Heights for Alternatives B, J, T, and N Avoidance.
04/10/2017	WMPO TAC Meeting	NCDOT: Karen Collette, Jay McInnis AECOM: Neil Dean, Celia Foushee, Joanna Rocco	New Hanover County offices	To update the TAC on the status of the project studies and present the results of the preliminary alternative impacts analysis.

Agency Meetings

Date	Meeting Type	Attendees	Location	Purpose
05/30/2017	NEPA/Section 404 Merger Meeting: CP 2A	FHWA: Ron Lucas USACE: Monte Matthews, Brad Shaver, John Policarpo USFWS: Gary Jordan NOAA, NMFS: Ken Riley, Fritz Rhode NCDWR: Joanne Steenhuis NCWRC: Travis Wilson NCDCM: Cathy Brittingham, Stephen Lane, Curt Wemchert NCSPA: Stephanie Ayers NCDOT: Brook Anderson, Paul Atkinson, Jason Dilday, Madisyn Elam, Kevin Moore, Mason Herndon, Katie Hite, David Leonard, Jay McInnis WMPO: Gary Doetsch, Mike Kozlosky, Pat Batleman Town of Leland: Brenda Bozeman CALXY: Mark Mickley HNTB: Tracy Roberts AECOM: Meme Buscemi, Neil Dean, Morgan Foster, Celia Foushee, Joanna Rocco	NCDOT Division 3 Office	To present project information to the Merger Team in order to obtain CP 2A: Bridging and Hydraulic Structures and to discuss the alternatives and associated impacts.

Agency Meetings

Date	Meeting Type	Attendees	Location	Purpose
08/17/2017	NEPA/Section 404 Merger Meeting: CP 2A Follow-up	FHWA: Ron Lucas USACE: Monte Matthews, Brad Shaver USFWS: Gary Jordan NOAA, NMFS: Ken Riley HPO: Renee Gledhill-Earley NCDWR: Joanne Steenhuis NCWRC: Travis Wilson NCDCM: Cathy Brittingham, Stephen Lane, Curt Wemchert NCSA: Stephanie Ayers NCDOT: Paul Atkinson, Hardee Cox, Jason Dilday, Mason Herndon, Keith Honeycutt, Jim Harris, Jay McInnis, Chris Rivenbark, Mark Staley, Stephen Yeung WMPO: Mike Kozlosky, Pat Batleman Town of Leland: Brenda Bozeman CALXY: Mark Mickley HNTB: Tracy Roberts AECOM: Meme Buscemi, Neil Dean, Celia Foushee, Joanna Rocco		
07/19/18	Tolling Discussion Meeting	FHWA: Ron Lucas, George Hoops, Kristina Solberg WMPO: Mike Kozlosky NCDOT: John Conforti HNTB: Tracy Roberts AECOM: Celia Miars, Joanna Rocco	Conference call	To discuss how tolling should be discussed in the DEIS.



MEMORANDUM

To: Project File

From: David Griffin

Date: December 5, 2005

Subject: *Report of Meeting, November 29, 2005, 2:00 P.M.
North Carolina Turnpike Authority – Cape Fear Skyway Project
General Coordination/Scoping Meeting*

A List of Participants/Agenda was distributed at the beginning of the meeting (attached).

1. Introductions

Tracy Roberts led the discussion.

Gail Grimes is the Project Engineer and Project Manager for the Authority. Tracy Roberts, HNTB, will serve as Project Coordinator for day to day contact. Anne Redmond is HNTB's NEPA Project Manager. Craig Deal is HNTB's Deputy Project Manager of the NCTA GEC. Bob McDowell is the GEC Project Manager. Chuck Johnson and Spencer Franklin are the Traffic Engineers with Spencer being the point of contact for traffic. Henry Liles is HNTB's Principal in Charge and Whit Webb will provide general oversight and QA/QC. Bill Martin and John Ponder, MAB, are traffic consultants to HNTB. David Griffin will serve as URS' Project Manager, assisted by Jeff Weisner as Project Planner and Peter Trencansky as Project Engineer.

2. Contractual Issues/Invoicing

Craig Deal led the discussion stating that URS would be contracted as the prime consultant directly with the Authority. Work will be performed under lump sum task orders under the "not-to-exceed" contract. Gail Grimes added that the contract was a standard NCDOT contract, but has undergone some minor revisions to reflect current work standards, provisions of SAFETEA-LU, and items specific to the Authority. She stated that all Turnpike projects will be reviewed by NCDOT Fiscal and the draft contract between NCTA and URS is currently being audited. The Authority is targeting execution before the Christmas holidays. URS should begin preparing a scope and estimate for the first Task Order so that it can be processed immediately upon contract approval.

Craig stated that invoicing will be coordinated through HNTB. Invoices will then be routed to Gail for processing. HNTB will provide URS with invoice and progress report templates.

3. Schedule

Craig distributed a project schedule, which is the same schedule developed during the proposal phase (attached). He explained that the schedule was based on an EIS and Design-Build delivery. Some line items have been simplified and may be expanded if the need arises. Timelines for certain tasks may require more time while other timelines may be reduced. Whit Webb emphasized the importance of making the primary deliveries (e.g., DEIS, FEIS, ROD) on time; the project completion date shown on the schedule (i.e., ROD-09/04/2009 and Award Construction Contract-11/27/2009). The schedule is schematic to show major milestones and deliverables. A more detailed schedule will be developed by URS based on the work plan. If intermediate dates are adjusted, the schedule must reflect another change to compensate for the lost time. Changes must also be justified.

Whit added that the schedule currently reflects a Design-Build process, mainly because this process is generally perceived as faster. He encouraged taking advantage of opportunities to expedite the schedule in any way possible. Whit added that if the schedule can be compressed and that the Design-Bid-Build could be accomplished in a shorter timeframe, final design could be supplemented to the contract. Whit also stated that the Authority can acquire right-of-way at-risk once the LEDPA is determined. Peter Trencansky added that if survey data are collected appropriately, the final design plans could be developed from the preliminary plans with little extra effort, but these expenditures would be easily justified by the time savings to the project. Craig Deal stated that the bridge is viewed by many to be a potential "signature" bridge. Therefore, there could be an option for competition for the design of the high-rise portion where it crosses the Cape Fear River.

4. Merger Process

Craig led the discussion regarding the Merger Process. As it currently stands, Turnpike projects must comply with the Merger 01 process. He explained that meetings had been held with the USACE and DENR to identify ways to expedite the process. One measure that may be implemented is that of accountability by imposing timeframes for reaching concurrence and allowing for immediate executive review should concurrence not be achieved within the prescribed timeframe. The process has not yet been finalized, but it must comply with NCDOT procedures. Craig added that providing the Merger Team with comprehensive, high quality products in a timely manner will go a long way toward meeting schedules and developing trust with the agencies. Agency meetings need to be held soon.

Turnpike projects must comply with NCDOT practices, standards, and policies. Any modification of current NCDOT standards, including the Merger process, would need to be approved by the NC Board of Transportation.

Discussion turned to wetland resources in the area. Whit stated that delineations had been performed in the Brunswick Forest development. However, a Freedom of Information Act request to the USACE will need to be filed in order to obtain digital delineations.

Regarding Purpose and Need, Gail Grimes is currently reviewing a Draft report. The Purpose and Need Report will not necessarily be finalized immediately; rather it will be left

open as the initial phase of the NEPA process evolves. It is anticipated that URS may need to revise the Draft Purpose and Need Report to interface with the NEPA documentation. Gail is working to accelerate photogrammetry and traffic related efforts. Any needs with respect to these efforts should be requested through the GEC.

5. Scoping Efforts

Anne Redmond explained that Task Orders can be scoped as far ahead as desirable, provided the task elements are manageable. Scopes should be coordinated with Tracy and Anne. They are to be provided with blank estimate sheets so they can prepare "in house" manhour estimates. Estimates will be negotiated with Tracy and Anne, hourly rates will then be applied and estimates will be forwarded to Gail. Gail added that the estimates will undergo an NCDOT Audit. Gail further added that the Authority has established a fixed fee policy. A 10% fee will be added to Task Orders greater than \$250,000; 12% to Task Orders between \$100,000 and \$250,000; and 15% to Task Orders less than \$100,000. The larger fees are due to the faster schedules associated with Turnpike projects. Gail explained that NCDOT should not be engaged in conversations regarding Authority projects. There is concern about how much time NCDOT staff is spending on Authority projects. If discussions with NCDOT staff are necessary, Gail and HNTB should be notified.

Brief discussions ensued regarding preparation of scopes for the first Task Orders. Alternatives development, an agency scoping meeting, a public workshop, and local meetings should be included in the first Task Order. Other items should be discussed with HNTB. Per Gail's e-mail, visualization efforts will be included under another Task Order. Whit explained that the Authority wants to put together a marketing/PR type video. Each of the turnpike projects will be featured. Additional coordination efforts are needed for this soon as the Authority is hoping to develop this within about three months. HNTB's visualization team is based in Plano, Texas. Whit stated that the Authority hired Julia Jarema to manage public affairs and she will be involved in all public involvement tasks.

6. Traffic Forecasting

Spencer Franklin initiated the discussion about traffic forecasting. He explained that forecasts were prepared during the summer of 2005 and that MAB is building in the Wilmington Bypass portion as it is a recent addition. Wilbur Smith will be preparing traffic revenue forecasts in early 2006, which will be conservative estimates for use in the bond markets. Bill Martin explained that the current travel demand model is not up to standard and the new model will not be available until late 2006. Gail stated that all traffic forecasts would be updated once the new model is finalized. MAB is using trend line forecasts for the 2005 and 2030 No-Build. The discussion included truck traffic around the port and potential interchange locations. The primary concern is that MAB understands URS' needs in terms of traffic data to complete purpose and need and begin developing alternatives and to avoid schedule interruptions.

Discussion turned to the Wilmington Bypass traffic. Peter explained that URS is preparing the Final EIS for the Bypass and that traffic forecasts presented in the FEIS should coincide with those of the Skyway. The benefits and detriments to both projects were discussed. It



Memorandum/Project File
December 5, 2005
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was decided that MAB would complete the 2005 and 2030 traffic by the end of the year. These data will then be compared with Wilmington Bypass data to determine if any additional changes are needed.

7. Data Sharing & Collection

HNTB has a lot of information and will serve as the central repository. Tracy will make copies of all available project data, including minutes from previous meetings, and will provide to URS this week or next. URS will prepare the meeting minutes for today as well as all future project-related meetings. Requests for data from the Authority or NCDOT should go through HNTB.

Tracy provided URS with a CD containing aerial photography.

8. Other Items

Gail emphasized that no comments should be made to the media. Any contact made in this regard should be directed to David Joyner at the NCTA. Team members should limit discussion of Turnpike projects to those under contract to work for the Authority. URS will also be setting up internal policy with regard to handling telephone calls or other contact from anyone.

The meeting adjourned at 4:45 P.M.

DAG:bkc

Attachment

Project Name
Cape Fear Skyway

Date of Meeting
11/29/05

HNTB

HNTB Project #
40225

Location
HNTB Raleigh Office

Purpose of Meeting
General Coordination / Scoping

Time
2:00pm

MEETING AGENDA

Participants

NCTPA

Gail Grimes, PE

HNTB

-Henry Liles, PE
-Whit Webb, PE
-Craig Deal, PE
-Anne Redmond, EI
-Chuck Johnson, PE
-Spencer Franklin, PE
-Tracy Roberts, AICP

URS Corporation

-David Griffin, CEP
-Jeff Weisner, AICP
-Peter Trencansky, PE

MAB

-Bill Martin, PE
-John Ponder

- | | | |
|----|--|------------------|
| 1. | Introduction of Team Members / Explanation of Project Roles
-Organizational Chart
-Points of Contact | Tracy Roberts |
| 2. | Contractual Issues / Invoices | Craig Deal |
| 3. | Schedule | Craig Deal |
| 4. | Merger Process | Craig Deal |
| 5. | Upcoming Scoping Efforts | Anne Redmond |
| 6. | Traffic Forecasting
-Update on current and future efforts
-Traffic Revenue Forecasting (Wilbur Smith Associates)
-Collaboration between HNTB, URS and MAB | Spencer Franklin |
| 7. | Data Sharing / Collection | Tracy Roberts |
| 8. | Other items | All |

NOTES: Please call if you have any questions.



MEMORANDUM

To: Project File

From: Jeff Weisner

Date: March 17, 2006

Subject: **Final Report of Meeting, January 13, 2006, 1:30 P.M.**
North Carolina Turnpike Authority (NCTA) – Cape Fear Skyway Project
Agency Scoping Meeting

Attendees: See attached list and Sign-In sheets

Location: The meeting was held in the Board Room (Room 150) of the North Carolina Department of Transportation (NCDOT) Transportation Building (Address: 1 South Wilmington Street, Raleigh, North Carolina 27601).

Purpose: The purpose of the meeting was to identify important issues related to the proposed action that should be considered during the study process, and to provide stakeholders with the opportunity to discuss these issues with the project study team.

Meeting Notes: Prior to the meeting, handouts, which included a project coversheet, meeting agenda, project overview, and land suitability map) were distributed to meeting attendees. A large size land suitability map was displayed for reference purposes.

David Griffin started the meeting with introductions of those present. He proceeded with reviewing the information presented in the project overview. The information presented included project description, adjacent TIP projects, purpose and need, and the existing transportation network. David also reviewed the known environmental issues, document type and schedule, and upcoming public involvement.

After the project overview, David opened the meeting for questions and comments on the project.

David Emilita, City of Southport, asked if the newly proposed port facility, which would be located just north of Southport will be considered with respect to the project. David Griffin responded that it would, particularly with respect to future traffic and freight movement, that would be generated by a future port facility. He also stated that port traffic in Wilmington will be studied as well.

Brian Wrenn, North Carolina Division of Water Quality (DWQ), asked what the traffic volumes are on US 17 between US 74/76 and downtown Wilmington. Preliminary traffic data were not available at the meeting, but Peter Trencansky, URS, responded that he thought traffic might be around 70,000 to 80,000 vehicles per day on that section. Traffic has been submitted to NCDOT Transportation Planning Branch for review. Brian Wrenn asked if those numbers were taking into consideration the MLK Parkway or the Wilmington Bypass. Allen Pope, NCDOT Division 3, responded that according to the feasibility study,



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even with the transportation improvements of I-140 and MLK Parkway, there will still be a congestion problem on US 17. Traffic studies that are currently underway consider both future projects and projects under construction. Don Eggert, RPO Coordinator with Cape Fear Council of Governments, stated that MLK Parkway would not alleviate congestion for vehicles coming from the west. These vehicles must still use the existing congested bridges over the Cape Fear River.

Brian Wrenn asked if the project will really help with the military traffic from Ft. Bragg and Sunny Point since it seems that their problem would be bottlenecking on NC 133 between Southport and the proposed Cape Fear Skyway. The response was that the project would be more effective for the military traveling between Lejeune in Jacksonville and it will help with cargo transportation between Sunny Point and the Port.

Dave Timpy, United State Army Corp of Engineers (ACE), asked if this project was federally funded and, if so, what the Federal Aid Number is. The response was yes and the number could be found at the top of the meeting agenda. Dave Timpy further asked if a Federal Highway Administration (FHWA) representative was present. No one representing FHWA was present. NOTE: FHWA did not receive an invitation to attend the scoping meeting. Meeting materials and final minutes will be forwarded to FHWA.

Sarah McBride, North Carolina Division of Cultural Resources (DCR), State Historic Preservation Office (HPO), asked if the required vertical clearance for the bridge been determined. David Griffin responded that 185 feet and 225 feet were used in the feasibility study completed two years ago. Fritz Rohde, North Carolina Division of Marine Fisheries (DMF), stated that clearance is limited to 185 feet by the power line crossing the river south of the project area.

Fritz Rohde stated that the DMF position is that with the environmental concerns present and available at this time, the need for the project does not appear to outweigh the impacts and they may have several issues with the project.

Chris Militscher, United States Environmental Protection Agency (EPA), asked if both toll and non-toll alternatives would be evaluated. Gail Grimes, North Carolina Turnpike Authority (NCTA), responded that there is no definitive answer at this time, but NCTA is currently in the process of conducting a preliminary traffic and revenue feasibility study that would initially determine the viability of a toll alternative.

Brian Wrenn asked if the military would have to pay a toll. Whit Webb responded that Wilbur Smith Associates, contracted by NCTA to conduct traffic and revenue studies, will have to do their revenue studies to determine this. Most likely the military will pay the toll unless they become involved in the project and work out a funding agreement. Brian further asked if there are going to be separate traffic studies for non-toll and toll options. Whit responded that HNTB will be doing the traffic analysis for freeway option and Wilbur Smith Associates will be doing the traffic studies for the toll option. Wilbur Smith Associates will be doing an independent review where they use their own assumptions to determine the traffic in connection with revenues. Wall Street investors require that these groups remain independent of each other. Brian asked if there will be any coordination between HNTB and Wilbur Smith Associates to ensure that the same assumptions are being made and that they are using the same preliminary data. Gail Grimes responded that there would be coordination but not collusion. They could use the same preliminary data, but Wilbur Smith Associates might also decide that they want to use



something different. The bond market on Wall Street, for investment purposes, requires a separate traffic and revenue study that is conducted independently from the project.

Chris Militscher asked if a preliminary study needed to be done to see if the project can be bonded. Wilbur Smith Associates is doing a preliminary study that will determine if the project has potential viability as a toll road. Chris Militscher further asked who does cost estimating and who determines the threshold for toll revenue feasibility. URS and HNTB will determine construction costs and Wilbur Smith Associates will determine the toll revenues. Whit Webb explained that it is unlikely that tolls would cover the total cost of the project and there could be a revenue gap between the toll revenue and the cost of the roadway. NCTA will be hiring a financial advisor to figure out how to fill any gaps in funding. There are several funding mechanisms that could be used to fill the gap including loop funds, TIFIA (Transportation Infrastructure Finance and Innovation Act) loans, and Garvey Bonds. Wall Street investors need to be fairly certain of cost before bonds will be issued. That is why NCTA needs to conduct the environmental studies and traffic and revenue forecast before the project can be determined a toll road. Investors need to know that the project will be permitted, the mitigation costs, and that there will be an adequate toll revenue stream.

Gail Grimes stated that NCTA and HNTB have talked about organizing a session for agencies on toll roads. She asked if there would be any interest in that. The general response was yes. Dave Timpy stated that it would be helpful as he has many questions about funding, statutory requirements and environmental processes with regard to the NCTA. Gail Grimes stated that the Turnpike Authority works through the NCDOT, which allows for the use of federal highway funds.

Dave Timpy stated that NCDOT has worked out agreements on certain issues, threatened and endangered species, for example, with federal agencies. He asked if NCTA had similar agreements. Gail Grimes responded that it is understood that there are certain agreements such threatened and endangered mussel species in place that currently do not include NCTA. NCTA is working on a blanket agreement with NCDOT that will help resolve some of these issues. Dave Timpy stated NCDOT had many processes and policies that had been worked out over many years and that the Merger 01 streamlining agreement is a good example. He recommended that NCTA take advantage of the Merger process. Gail stated that NCTA is not party to the Merger 01 agreement. NCTA is still trying to determine what procedures to follow for agency coordination. Gail further stated that NCTA would comply with NEPA and all other federal requirements.

Chris Militscher stated that some types of agreements apply to FHWA and FHWA has delegated certain responsibilities to NCDOT for setting certain policies such as establishing noise abatement criteria thresholds. He asked if NCTA will be using federal or state policies. Gail stated that NCTA will be using federal policies, but they are still working on an agreement with NCDOT to determine which NCDOT policies to adopt and which ones not to adopt.

Chris Militscher asked if the toll road would be part of the interstate system. Whit Webb responded that if it is constructed by NCTA, it would not have an interstate shield, but if it gets turned over to the DOT it could have an interstate shield.

Dave Timpy stated that some agency representatives present were in NCDOT funded positions and asked if they were there illegally. Gail responded that they were not there illegally and that NCTA did not specifically invite NCDOT funded agency personal. NCTA is still working out issues regarding



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coordination with NCDOT funded agency personal. NCTA has committed to NCDOT that it will not delay TIP projects by using NCDOT resources.

Chris Militscher asked why a NCTA project would have a TIP number. The response was that it is a requirement of all Turnpike projects that they be TIP projects listed on the Long Range Transportation Plan (LRTP).

Steve Sollod, North Carolina Division of Coastal Management (DCM), asked for clarification that two studies are to be conducted, one for toll road and one for freeway. It was stated that that is essentially correct. He further asked what happens if it is determined that the project is a freeway project and not a toll road. The response was that it will be turned back over to NCDOT.

Joshuah Mello, Wilmington Urban Area Metropolitan Planning Organization (WMPO), asked what would need to happen for it not to be a toll project; at what point is the decision made on whether or not the project will be a toll road. Whit Webb responded that there isn't an exact answer; it could be anytime. It would occur if it is determined that the costs are too great and/or toll revenues are not enough. NCTA will determine a break point. If the project is not carried forward as a toll project there are several different funding mechanisms that could be used to carry the project forward. Joshuah Mello stated that the MPO understands that it will be difficult for the project to move forward quickly without some kind of outside financing. He further stated that there is a great deal of local support for the project.

Steve Sollod stated if the decision on whether or not the project is a toll road is not made until after the Record of Decision (ROD), then that adds to the reasons why the project should follow the Merger 01 process.

Dave Timpy asked what the next step in the project was for agency involvement. Gail Grimes stated that this was uncertain. NCTA has spoken with the ACE at an executive level and understands they feel strongly about NCTA using the Merger process. NCTA is committed to involving the agencies. Dave Timpy stated that the Corps can only issue a permit on a project that has a valid purpose and need; that demonstrates avoidances and minimization of impacts; and commits to mitigation of unavoidable impacts. It has to comply with 404 regulations.

Steve Sollod stated that the project must also be consistent with the CAMA (Coastal Area Management Act) and DCM requirements.

Travis Wilson, North Carolina Wild Resource Commission (WRC), asked when data would be available that can justify the purpose and need. The response was that the initial traffic studies by HNTB and Wilbur Smith Associates are scheduled to be available by April or May.

Joshuah Mello stated that the MPO was undertaking a traffic study of the relocation of US 17 in Wilmington and stated that this may benefit environmental justice populations in the study area east of the Cape Fear River, as the plan is to reduce traffic through minority neighborhoods on 16th and 17th streets.

Dave Timpy added there are potential environmental justice issues with the Spring Hill Community on the western end of the project. He asked Sarah McBride if there were any questions or comments regarding cultural and historic resources. She responded that she wasn't familiar enough with the project and would want NCTA to follow established procedures with respect to cultural resource identification.



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and effects assessment.

Dave Timpy asked what the next steps in the project were. David Griffin responded that a public scoping meeting would be conducted sometime in March. Dave Timpy asked if meetings would be conducted on both sides of the river. The response was yes, this is the current thinking.

Steve Sollod suggested that the Spring Hill community be included. Jeff Weisner, URS, stated that a Community Impacts Assessment had already been initiated to identify community groups and, to the greatest extent possible, to ensure that citizen stakeholders are included in the project development process. Joshua Mello asked if the Wilmington side of the project area would be included in the study. The response was yes.

Dave Timpy suggested coordinating with the United States Coast Guard.

David Griffin asked Jim Harris, NCDOT Rail Division, if there were any railroad concerns. Jim stated that other than the military railroad there are no other issues. CSX does not go into the project area. All the switching for Sunny Point cargo occurs at the Davis Yard in Leland.

Don Eggert suggested coordinating with Sunny Point. HNTB responded that they have already initiated coordination with them.

Steve Sollod asked if CAMA land use plans had been considered. Don Eggert stated that Brunswick County was in the process of updating their plan. Steve Sollod suggested that the project be reviewed for consistency with CAMA land use plans.

Joshua Mello stated that, at the request of the NCTA, the City of Wilmington was preparing a corridor preservation map to protect right-of-way for the Cape Fear Skyway. Developers have shown interest in the area proposed for the eastern project terminus. Dave Timpy stated that the City should be advised that it is at risk of the terminus location changing.

David Griffin asked if there were any more questions or comments. The meeting was adjourned shortly after 3:00 P.M.

JCW:bkc

Attachment: Sign-In Sheets

**MEETING ATTENDEES**

Last Name	First Name	Department	Phone Number	E-Mail
Grimes	Gail	NC Turnpike Authority	919-733-4438	ggrimes@dot.state.nc.us
Timpy	Dave	US Army Corps of Engineers	910-251-4634	david.s.timpy@usace.army.mil
Militscher	Chris	USEPA - Raleigh Office	919-856-4206	militscher.chris@epa.gov
McBride	Sarah	NC Department of Cultural Resources - SHPO	919-733-6545	sarah.mcbride@ncmail.net
Rohde	Fritz	NC Division of Marine Fisheries	910-796-7339	fritz.rohde@ncmail.net
Wilson	Travis	NC Wildlife Resources Commission	919-528-9886	travis.wilson@ncwildlife.org
Sollod	Steve	NC DENR-Division of Coastal Management	919-733-2293 Ext. 230	steve.sollod@ncmail.net
Wrenn	Brian	NC DENR-Division of Water Quality	919-733-5715	brian.wrenn@ncmail.net
Pope	Allen	NC DOT Division 3	910-251-5724	apope@dot.state.nc.us
Icenhour	Parks	NC DOT Location & Surveys	919-662-4616	picenhour@dot.state.nc.us
Harris	James B.	NC DOT Rail Division	919-715-8744	jbharris@dot.state.nc.us
Strickland	Neal	NC DOT Right of Way	919-733-7694	nstrickland@dot.state.nc.us
Harris	David B.	NC DOT Roadside Environmental Unit	919-733-2920	davidharris@dot.state.nc.us
Staley	Mack	NC DOT Roadside Environmental Unit	919-733-2920	mstaley@dot.state.nc.us
Cove	Lori	NC DOT Traffic Engineering	919-250-4151	lcove@dot.state.nc.us
Wasserman	David	NC DOT Transportation Planning Branch	919-715-5482 Ext. 380	dswasserman@dot.state.nc.us
Eggert	Don	Cape Fear RPO	910-395-4553	degger@capefearcog.org
Emilita	David	City of Southport	910-457-7961	david_emilita@southportnc.org
Holden	Norman	City of Southport	910-457-5574	norman_holden@southportnc.org
Mello	Joshuah	City of Wilmington/MPO	910-341-3234	joshuah.mello@wilmingtonnc.gov
Roberts	Tracy	HNTB	919-424-0479	troberts@hntb.com
Webb	Whit	HNTB	919-424-0425	webbb@hntb.com
Redmond	Anne	HNTB, NCTA GEC	919-424-0457	aredmond@hntb.com
McCrain	Jerry	EcoScience	919-828-3433	mccrain@ecosciencenc.com
Thrush	Layna	EcoScience	919-828-3433	thrush@ecosciencenc.com
Iverson	Eleni	URS	919-461-1299	eleni_iverson@urscorp.com
Trencansky	Peter	URS	919-461-1332	peter_trencansky@urscorp.com
Weisner	Jeff	URS	919-461-1440	jeff_weisner@urscorp.com
Hayes	Peggy	Hayes Planning Associates	910-343-8801	hayesplan@bellsouth.net



MEMORANDUM

To: Project File

From: Jeff Weisner

Date: June 6, 2006

Subject: **Report of Meeting, May 25, 2006, 10:30 A.M.
North Carolina Turnpike Authority – Cape Fear Skyway Project
Coordination Meeting with City of Wilmington**

A coordination meeting was held with the City of Wilmington on May 25, 2006 at 10:30 A.M. The list of attendees is as follows:

Gary Shell	Deputy Director, City of Wilmington Parks, Rec and Downtown
Mike Kozloski	Senior Transportation Planner, City of Wilmington Planning Department
Steve Bridges	Purchasing Manager, City of Wilmington Finance Department
Jeff Weisner	URS Corporation
David Griffin	URS Corporation
Marty Peate	URS Corporation

The meeting began with introductions and identification of the purpose of the meeting, which was to collect land use information on properties within the project study area that are owned or anticipated to be purchased by the City of Wilmington. This information is needed to identify potential Section 4(f) issues that might be associated with the Cape Fear Skyway project and to identify any properties planned for public use.

The discussion initially focused on the Flossie Bryan property which was willed to New Hanover County by the late owner. City of Wilmington representatives indicated that there are special provisions associated with the property and the County should be contacted for specific information – Neal Lewis, Director of Parks Department at 910.798.7198 and possibly Ken Burpo, Assistant County Attorney.

The City of Wilmington is in the process of trying to acquire a 42 acre parcel of which 30 acres would be used for a future softball complex. The property is south of Bryan Road and borders the Flossie Bryan property (see attached map). The City is concerned that the project could interfere with future plans for the softball complex if the alignment crosses the center of the parcels. The City would not be opposed if the project skirted the southern edge of the property. To minimize potential Section 4(f) issues, it was suggested that in their acquisition of the property that the City not preclude a possible transportation corridor in defining the future intended use of the property. City representatives did not indicate that it would be a problem to include language that would not preclude transportation as a possible use of a portion of the property.

Mr. Shell indicated the City was also interested in purchasing property from the port but stated that he was not optimistic that the effort would be successful.



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Mr. Shell proceeded to identify other exiting and future land uses of interest within the project study area including the city-owned wastewater treatment plant and maintenance facility, both of which are located north of Independence Road on River Road (see attached map). A privately owned marina is under construction near the intersection of River Road and Independence Road and a large development is planned just south of Barnard Creek on both sides of River Road, which is outside the City limits. The county should have more information on the development.

Other issues discussed included local concerns for the project such as relocations, noise impacts and inclusion of bike lanes/paths on the bridge.

Action Items

- URS will contact New Hanover County for information on the Flossie Bryan property and the proposed development south of Barnard Creek
- URS will develop a map showing the location of the land uses discussed and submit it to Gary Shell to check accuracy.

JCW:jcw

Attachment: Map of identified City Parcels



MEMORANDUM

To: Attendees

From: Kiersten R. Giugno

Date: July 17, 2006

Subject: Minutes of Meeting held June 8, 2006 at 10:00 AM
North Carolina Turnpike Authority – Cape Fear Skyway Project

Attendees:

Howard Varnam	USACE Wilmington – Navigation Branch
Richard Kimmel	USACE Wilmington – Planning & Environmental Branch
Bob Keistler	USACE Wilmington – Project Management Branch
William Adams	USACE Wilmington – Planning & Environmental Branch
Frank Yelverton	USACE Wilmington – Planning & Environmental Branch
Jimmy Hargrove	USACE Wilmington – Navigation Branch
Dave Timpy	USACE Wilmington – Regulatory Division
Noel Clay	USACE Wilmington – Planning & Environmental Branch
Scott McLendon	USACE Wilmington – Regulatory Division
Craig Deal, P.E.	HNTB / GEC for NCTA
Tracy Roberts, AICP	HNTB / GEC for NCTA
Paul Barber, P.E.	HNTB / GEC for NCTA
Lonnie I. Brooks, P.E.	NCDOT – Structure Design Unit
David Griffin, CEP	URS Corporation – North Carolina
Kiersten R. Giugno	URS Corporation – North Carolina

A meeting was held at the USACE Wilmington Office (69 Darlington Avenue) to discuss navigational requirements associated with the proposed Cape Fear Skyway (TIP U-4738), a candidate toll road project under study by the NC Turnpike Authority. The Cape Fear Skyway would feature a new crossing over the Cape Fear River. The meeting was opened by T. Roberts with introductions of the attendees. The meeting was turned over to D. Griffin who provided a map overview and brief description of the study area. The Cape Fear Skyway would begin at the proposed US 17 Interchange with the Wilmington Bypass in Brunswick County and extend 9.5 miles in an easterly direction to terminate at US 421 in Wilmington. D. Griffin summarized the status of the Wilmington Bypass project and informed the group that the Environmental Impact Statement (EIS) for this project is nearly final. D. Griffin noted the terminus of the Wilmington Bypass, south of the community of Spring Hill, falls within the preliminary study area for the Cape Fear Skyway. D. Griffin described the general landscape throughout the preliminary study area.

D. Griffin noted the purpose of the meeting was to solicit information regarding navigational requirements and concerns of the United States Army Corps of Engineers (USACE). A list of preliminary data needs,



included as an attachment to these meeting minutes, was presented to the group to start the discussion. The following topics were discussed by the entire group:

Technical and Environmental Documents

It was noted that several environmental documents have been prepared. In the late 1960's the channel, south of Island 13 and the existing power line, was deepened to 38 feet. In 1989 and 1996 Environmental Impact Statements (EIS) were prepared. It was noted that the 1996 EIS and Feasibility Report Volume I is available on the internet. Volumes II and III are not available in pdf; however, the Technical Studies are located within the USACE library. In 2000, an Environmental Assessment (EA) was prepared. This document is available in pdf. URS requested copies of these documents and any other known technical reports that are relevant to the proposed Cape Fear Skyway.

In the mid 1990's, NC-HPO worked with the USACE in defining archaeologically sensitive areas to be studied, which were then surveyed by the USACE. This survey focused on underwater resources and was limited to the channel area (i.e., did not include the River banks). R. Kimmel provided a map of the sensitive areas to T. Roberts, which will be provided to URS.

The 1996 EIS required the preservation of the sensitive biological resources (e.g., fishery and wetland habitats) located on Island 13. The island was sculpted for primary nursery areas to mitigate for impacts associated with the deepening of the Wilmington Harbor. Island 13 is closed to dredge spoil disposal. The USACE prefers this area not be impacted by the proposed Cape Fear Skyway. However, Island 13 is approximately 30 acres and, if necessary, could be spanned but no piers should be placed on the island.

Pursuant to jurisdictional requirements, the USACE has only surveyed the water depths within the federally dedicated channel. These surveys are available on the USACE website at www.saw.usace.army.mil/nav. Water depths are shown from mean lower low water (MLLW). Team members can sign up on this website to receive email alerts when the surveys are updated. Survey data for areas outside the jurisdiction of the USACE (i.e. outside the width of the dedicated channel) is not available. A contract with a private surveyor would be required if a bank-to-bank survey is needed.

When the channel was deepened to 42 feet, blasts were set off in cones, which could have caused fractures leaving loose materials within the existing substrate. Approximately 78 blasts were set off downstream from Island 13 and the lower part of Brunswick channel through Keg Island. It was noted that a significant amount of geotechnical data is available. Boring Logs were prepared and are included as Appendix 2 of the 1996 EIS. Additional data has been generated since the aforementioned 1989, 1996, and 2000 reports were prepared. URS requested copies of the relevant data.

Channel Constraints

The 1996 EIS considered deepening the channel two, four and six feet. However, four feet was preferred. As such, the channel is currently 42 feet deep. There are no plans to deepen the channel any further.

A GIS map of the channel, including River widths and buffer areas was reviewed and provided to URS. The paper copy of the map was provided to URS. J. Hargrove agreed to provide URS with the metadata for this GIS map. The majority of the channel is 400 feet wide, with some areas as wide as 500 feet. For the most part, the flared, or wider areas, are along the turns of the River. A buffer area of approximately 142 feet beyond the dedicated channel width is required along both sides of the channel for maintenance activities.



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The buffer permits side slopes of approximately 3:1 to the channel bottom. The buffer setback is shown in red on the GIS map reviewed by the group. It is a District policy, signed by the Commander, that piers cannot be located within the buffer area identified for the Cape Fear River.

Several utilities were identified within the River bottom, just north of Island 13, near the Exxon dock. The USACE has information regarding a natural gas line (north of Island 13), paraxylene, and AT&T fiber optic cables in MicroStation format. Progress Energy owns overhead powerlines south of Island 13. J. Hargrove agreed to identify the types of utilities and provide URS with their locations. Utilities are also shown on navigation charts.

The Bridge structure (e.g., abutments, piers, bents) should preferably not be located at a turn in the River due to increased navigation concerns. It was suggested that URS work with the Cape Fear River and Cape Fear Docking pilots regarding pier placement constraints.

The Brunswick River has not been studied by the USACE. The study was limited to channel areas where commercial activity occurs and Brunswick River has none. However, it is understood that sunken WW II era Liberty Ships located in the Brunswick River along the south-western section of Eagle Island represent a potential cultural resources constraint. Underwater archaeological data should be obtained from the archives at Fort Fisher.

Both sides of the River are identified as primary nursery areas. The resource agencies have raised concerns regarding impacts, particularly from noise and vibration, to protected species (including the Short nose sturgeon and West Indian manatee). A red cockaded woodpecker survey (landside) will also likely be needed.

Disposal areas are at a premium and impacts should be avoided or minimized, and these areas should not be lost for use as mitigation sites. Disposal Area #14 located on the west bank of the mouth of the Brunswick River is owned by Bate's Lumber Company and would be a good location for piers but not for mitigation.

Eagle Island (a dredge spoil disposal site) has approximately 30 to 40 feet of soft sediment overlying the bedrock. Constructing the Bridge piers on Eagle Island would reduce potential vessel impacts. Potential vessel soft grounding would result in a decrease in damage to the vessel when compared to striking a pier within the River. However, the difficulties associated with the Bridge and ramps crossing the ship yards and industrial areas of the Wilmington Port were noted. Bridge foundation conditions would also be a challenge – would probably have to bore very deep to reach acceptable bearing conditions. USACE expressed concern over crossing Eagle Island.

The United States Coast Guard (USCG) may have constraints. It was suggested that URS work with the Coast Guard (Bill Brazier, Bridge Department) to incorporate their concerns within the horizontal and vertical constraints context of the navigational channel. The USACE will cooperate with the USCG with regard to prescribed clearances.

Action Items

H. Varnam to provide URS with relevant sections and associated technical reports of the 1989 EIS.

H. Varnam to provide URS with relevant sections and associated technical reports of the 1996 EIS.

H. Varnam to provide URS with a copy of the 2000 EA and relevant technical reports.

J. Hargrove to provide URS with the GIS files of navigational channel geometry for the Cape Fear River (based on map shown during the meeting).



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J. Hargrove to provide URS Microstation files of types and location of utilities within the Cape Fear River.

URS to contact Cape Fear River and Cape Fear Docking pilots regarding navigational requirements.

URS to contact United States Coast Guard.

End of Minutes.

KRG:krq



MEMORANDUM

To: Project File

From: Shannon Cox

Date: July 12, 2006

Subject: **Report of Meeting, June 22, 2006, 1:00 P.M.**
North Carolina Turnpike Authority – Cape Fear Skyway Project
Coordination Meeting with Brunswick County Planning Department

A coordination meeting was held in the Brunswick County Planning Department office on June 22, 2006 at 1:00 P.M. The list of attendees is as follows:

Leslie Bell	Director, Brunswick County Planning Department
Jeff Weisner	URS Corporation
Shannon Cox	URS Corporation

Mr. Weisner began the meeting with introductions and by indicating that the purposes of the meeting were to begin early coordination with Brunswick County's Planning Department and to identify any concerns or input that should be included in the Community Impact Assessment being conducted for the Cape Fear Skyway project. Rather than discussing a specific set of questions, the meeting proceeded as a general discussion of existing communities in Brunswick County, future plans and concerns about the project.

Mr. Bell began by discussing potential impacts of the project on NC 133. There has been rapid residential development in the vicinity of NC 133. Mr. Bell asked, once the Cape Fear Skyway terminates at NC 133, what will be the next phase of the project to complete I-140? Mr. Bell would prefer that NC 87, rather than NC 133, be the main route to the proposed port in Southport and wonders how NC 133 can be prevented from becoming the main route. His reasons for this preference are that there is no residential development along NC 87 and that NC 133 has both historic and environmental value. One possible suggestion was to designate NC 87 as a truck route. The need for controlled access along the Cape Fear Skyway, with potential interchanges at NC 133, in Brunswick Forest, and at US 17 was also discussed.

As an additional concern, Mr. Bell indicated that there is a potential for traffic problems on US 17 south of the Super Street improvement area depending on the timing of the Wilmington Bypass project and the Cape Fear Skyway.

Mr. Bell also noted a concern for careful consideration of environmental justice issues in Brunswick County as the project develops. Mr. Bell indicated that Brunswick County has developed a GIS layer showing communities in the county. Communities that could potentially be minority and or low-income in the vicinity of the project include the Dark Branch community, Easy Hill, Clairmont Woodlawn, Central Boulevard and Snowfield communities. Mr. Bell noted that the Snowfield



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community is very active and has developed a community center and athletic field. Brunswick County can share the GIS layer they developed showing the location of these communities. Mr. Bell suggested contacting Cyndi Hendricks, the GIS Supervisor, at 910-253-2390. Mr. Bell could not readily think of any leaders in these communities, outside of elected leaders, who could be contacted for outreach purposes.

Mr. Bell pointed out that 962 acres in the Coastal Land Trust area were donated to Brunswick County for use as a passive recreational area and to provide recreational opportunities around Town Creek.

Mr. Bell noted that discussions are taking place between the Town of Leland, Brunswick County and the developer of Brunswick Forest to develop a school in Brunswick Forest. There is also a potential for Leland's Town Hall to be moved into Brunswick Forest.

Mr. Bell also pointed out that there have been initial discussions with property owners south of Mallory Creek for a new development in that location. Mr. Bell did not have any additional information about the development project and suggested checking with property owners in the area.

Mr. Bell asked about the project schedule and, specifically, when alternatives would be developed. Mr. Weisner indicated that alternatives for further study would likely be developed by the end of the year.

Mr. Bell noted that maps should be corrected so that Clarendon Lane is shown as Kay Todd Road – this was verified in the field.

The meeting adjourned at approximately 2:30P.M.

SMC:smc



MEMORANDUM

To: Project File

From: Shannon Cox

Date: July 12, 2006

Subject: **Report of Meeting, June 22, 2006, 10:30 A.M.**
North Carolina Turnpike Authority – Cape Fear Skyway Project
Coordination Meeting with New Hanover County Parks Department

A coordination meeting was held in the New Hanover County Parks Department office on June 22, 2006 at 10:30 A.M. The list of attendees is as follows:

Neal Lewis	Director, New Hanover County Parks Department
Sam Burgess	Planner, New Hanover County Planning Department
Jeff Weisner	URS Corporation
Shannon Cox	URS Corporation

Jeff Weisner began by introducing the purposes of the meeting, which were to begin a discussion of any potential 4F issues that might be associated with the Cape Fear Skyway project and to identify any properties planned for public use.

Initial discussion centered on Bryan Farm, which had been identified by Neal Lewis as a newly acquired county-property through previous telephone conversations with Shannon Cox. Bryan Farm is located at Independence Boulevard, near where the Cape Fear Skyway is proposed to intersect. Neal Lewis indicated that the Bryan Farm is an approximately 60 acre tract that was willed to the county by Ms. Flossie Bryan. Acquisition of the property had been in the courts for 1.5 years, but was recently finalized. New Hanover County plans to use the property as a passive county park. Likely uses will include urban gardens that are awarded to the public on an annual basis using a lottery system. There are two homes on the property. Ms. Flossie Bryan's sister has a lifetime right to occupy the house that is located further south on the property. Ms. Flossie Bryan's niece has a right to occupy the house that is located further north on the property. If the niece does not occupy the house for six months, it may be used, along with surrounding gardens, as a museum demonstrating rural farm life or as an administrative building. The farm house appears to have been built in the 1940s or 1950s, and, while it is not expected to qualify as a historic property, will require historic analysis.

Neal Lewis indicated that he would like the 60 acre property to remain as a contiguous tract and that he is concerned the alignment of the Cape Fear Skyway would bisect the Bryan Farm. Neal Lewis pointed to a map that he had received showing the alignment of the Cape Fear Skyway crossing through the middle of the property. Jeff Weisner indicated that the alignment on the map Neal Lewis was showing was used in the feasibility study conducted for the project. He explained that, at this point in the environmental study, an alignment has not yet been determined. Jeff Weisner explained that the process of identifying alternative alignments for study is underway and that it is possible to study alignments that would not



bisect the property. The group discussed the possibility of an alignment that would traverse just north or just south of the Bryan Farm. While a small edge-piece of the property might be traversed with such an alignment, Neal Lewis thought that a 4F issue could be avoided if the bulk of the 60 acre property remained as a contiguous tract. Both Neal Lewis and Sam Burgess would prefer an alignment that would tie into Independence Boulevard further south than the alignment used for the feasibility study. Neal Lewis will need to discuss the issue with the Parks and Recreation Advisory Board. After discussing the issue with the Parks and Recreation Advisory Board, it was suggested that he submit a written comment to the North Carolina Turnpike Authority (NCTA).

Other public use and development projects in the vicinity of the Cape Fear Skyway were discussed. Sam Burgess indicated that the developers of the new marina under construction at the southern end of Independence Boulevard were required to include a statement in their plat that there may be a future thoroughfare in the area. A large mixed use development, currently called River Road Properties, is planned for both the east and west sides of River Road, south of Independence Boulevard. The project would include about 3,300 units on about 1,400 acres, and River Road would be moved inland to provide additional waterfront property. As part of the project, approximately 24 acres would be designated for public use. A conceptual plan of the project was provided by Sam Burgess following the meeting and is attached to these minutes. Other activities discussed were that some funding from the Clean Water Trust Fund is being used to preserve waterfront greenways. The county is also talking to Progress Energy about the potential to use utility right-of-ways for greenways. While Progress Energy has been receptive to the idea, the proposal has not yet reached the stage of designating corridors or buying land.

Sam Burgess asked what right-of-way (ROW) width would be required for the project. Jeff Weisner explained that the ROW is dependent on many factors such as the number of lanes, whether the road will have a toll and the footprint of interchanges, and had not yet been determined. He indicated that 300 feet is a typical ROW width at-grade for a four-lane freeway and that a wider ROW could be needed to accommodate for fill-slopes and interchange areas. Jeff Weisner indicated that a separate study will be done to help determine the bridge location and height and the bridge clearances could affect fill-slopes and ROW width.

Sam Burgess and Neal Lewis also asked about accessibility issues and where access would be controlled along the Cape Fear Skyway. Jeff Weisner indicated that full control of access is proposed for the project, however, access to Independence Boulevard and US 421 would be maintained and access to homes and the Bryan Farm in that area would likely not be a problem.

The meeting adjourned at approximately 11:45 A.M.

Action Items

- URS will provide contact information to Neal Lewis for a comment letter (*completed 6/23/06*).
- Neal Lewis will discuss the relevance of the project to the Bryan Farm with the Parks and Recreation Advisory Board and will provide a comment letter to the NCTA.
- URS will develop a map showing the location of the Bryan Farm and submit it to Neal Lewis and Sam Burgess to check accuracy.

SMC:smc

Attachment: River Road Properties Conceptual Plan



MEMORANDUM

To: Attendees

From: Joanna Harrington

Date: June 1, 2009

Subject: Minutes of Meeting held May 20, 2009 at 1:00 PM
North Carolina Turnpike Authority – Cape Fear Skyway Project
STIP U-4738

Attendees:

Janice Allen	NC Coastal Land Trust
Tracy Roberts, AICP	HNTB
David Griffin, CEP	URS Corporation – North Carolina
Joanna Harrington	URS Corporation – North Carolina

A meeting was held at the New Bern office of the NC Coastal Land Trust (NCCLT) to discuss the Cape Fear Skyway project and NCCLT properties that are within or near the study area.

David began the meeting by giving Janice an overview of the project (the attached figure was shown and includes the study area, feasibility alignment, and NCCLT properties) as well as the purpose and needs of the project. Janice asked about agency and public involvement and how they would fit into the project, and Tracy explained that the United States Army Corps of Engineers (USACE) and United States Coast Guard (USCG) will likely be cooperating agencies for the project, and that other federal and state agencies will be involved throughout the planning process. The Federal Highway Administration is the lead federal agency. David also explained that the public will have opportunities for input throughout the process; this began with public workshops in April of 2006. More public workshops are planned for later this year.

David explained that URS had received Geographic Information Systems (GIS) files from NCCLT, and Janice explained that those files show federal and state easements. Clarendon Plantation has both federal and state funding for acquisition of the easements on the property. The Clarendon Plantation easements were closed in December 2008 following a 10-year planning effort involving five property owners and several federal and state agencies. Clarendon has funds from the United States Fish and Wildlife Service (USFWS), United States Department of Agriculture (USDA) Forest Legacy to the North Carolina Division of Forest Resources (NCDNR), and the Clean Water Management Trust Fund (CWMTF). David asked about the property north of Clarendon, and Janice explained that this is a tract of land owned by Bate Land Company (under the name of Mark Saunders). This property is approximately 1,000 acres and is not currently being pursued for acquisition by NCCLT.

A discussion was held about other properties within the area that NCCLT may be interested in acquiring in the near future. Janice explained that NCCLT's main interest is acquiring land along Town Creek (in the southern portion of study area) because this water system has a high diversity of species due to its low acidity and limestone base as compared to other blackwater systems in the Coastal Plain. A tract of land that is of



Minutes of May 20, 2009 NCCLT Meeting

June 1, 2009

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particular interest is one owned by the Trask family. This tract of land is along Town Creek, and also borders the southern edge of the Brunswick Forest development. Other parcels of interest include the Copeland Tract and the inholding at Pleasant Oaks. The Copeland Tract is located just south of Clarendon Plantation along the Cape Fear River, and the inholding at Pleasant Oaks is located just south of the study area, along Town Creek.

Janice went over other NCCLT properties in the area that are indicated on the GIS files, such as the Alderman Nature Preserve in New Hanover County. She also explained that there are protected properties within the study area not owned by NCCLT, such as Eagle Island. This island is a USACE-managed spoil site, also managed by the Audubon Society and Resource Conservation and Development (a non-profit liaison of the Natural Resources Conservation Service). Walker Golder is the contact for the Audubon Society, and Marilyn Mearess is the contact for Resource Conservation and Development.

A discussion was held about what kind of development restrictions these existing conservation easements have, with particular emphasis on the Clarendon Plantation. Janice explained that Clarendon Plantation has historical significance, and NCCLT would also work with federal and state agencies to protect their interests in the property. She indicated that it is possible to get a copy of the conservation easements from Brunswick County, and they would have language about possible condemnation and development restrictions. Janice indicated that NCCLT does not typically pursue areas for acquisition that are proposed development or roadway corridors.

Janice explained that Clarendon Plantation is a significant natural heritage area, and the North Carolina Natural Heritage Program website should be referred to in the planning of the project to see if there are other natural heritage areas within the study area. She also suggested contacting the North Carolina Coastal Federation and the Cape Fear River Watch for information on other areas of interest. The Cape Fear Arch Conservation (Awareness for Cape Fear Region) Collaboration is a forum that coordinates several interest groups for conservation in the area, and will have their next meeting in August. Kristen Howell is the coordinator for this group.

Action Items

- URS to obtain conservation easement for Clarendon Plantation from Brunswick County.



MEMORANDUM

To: Attendees

From: David Griffin

Date: September 9, 2009

Subject: Minutes of Meeting held August 19, 2009 at 1:00 PM
North Carolina Turnpike Authority – Cape Fear Skyway Project
STIP U-4738

Attendees:

Rob Ayers	Federal Highway Administration (FHWA)
George Hoops, PE	FHWA
Shane York, PE	North Carolina Department of Transportation (NCDOT)
Mike Kozlosky	Wilmington Urban Area Metropolitan Planning Organization (WMPO)
Jennifer Harris, PE	North Carolina Turnpike Authority (NCTA)
Tracy Roberts, AICP	HNTB / NCTA General Engineering Consultant
David Griffin, CEP	URS
Peter Trencansky, PE	URS

A meeting was held on August 19, 2009 at the offices of the Federal Highway Administration (FHWA) to discuss the purpose and need for the Cape Fear Skyway project. As an outcome of a meeting held two weeks ago, Mike and Rob were to look at current and prior transportation planning documents to develop a proposed purpose statement for the Cape Fear Skyway project (a.k.a., Southern Bridge) for the group to review. Instead, Shane did some research and distributed a draft Purpose and Need Statement (P&N) by e-mail, which was distributed by Rob during the meeting (attached).

Rob initiated the discussion stating that he thought it was important to identify what the needs were from the local perspective. Rob thought it would be good for the Wilmington Urban Area Metropolitan Planning Organization (WMPO) to explain why they want this project and why it was put into the Long Range Transportation Plan (LRTP) initially. Rob indicated that he had looked at the LRTP and the North Carolina State Ports Authority (NCSPA) website and stated that he is not convinced that expedited military deployments or improved access to the Port of Wilmington could be used to justify project need. He included those thoughts in an e-mail which was distributed by Rob during the meeting (attached).

Mike stated that it is preferable to keep improved access to the Port of Wilmington in the P&N noting that the Cape Fear Skyway would provide enhanced service to the Port of Wilmington. It would also remove truck traffic from the congested Cape Fear Memorial Bridge and the downtown



area of Wilmington.

Rob distributed excerpts from the *Greater Wilmington Urban Area Transportation Plan* (City of Wilmington and NCDOT, March 2001) (attached) and asked if the project goal was to improve traffic flow on existing US 17, alleviate congestion on the Cape Fear Memorial Bridge, or get traffic across the Cape Fear River. Mike replied that the goal was to target the construction of a new bridge as it would aid in getting traffic across the river, alleviate congestion in downtown Wilmington, and alleviate traffic queues caused by the lift span of the Cape Fear Memorial Bridge. He also noted that emergency response times and hurricane evacuation clearance times would be improved by a new river crossing. Tracy noted that the *Hurricane Evacuation Analysis Technical Memorandum* (PBS&J, 2009) showed that there would be a 19-hour clearance time in 2035 without the Cape Fear Skyway, which is only one hour over the 18-hour statewide goal – so there would only be a very slight need in this regard.

It was re-stated that the project goals are primarily to:

1. Accommodate vehicular traffic across the river;
2. Move traffic in Brunswick County to south New Hanover County at some operational level;
and
3. To deemphasize congestion relief on existing US 17.

Rob said that, ideally, we want to show the need to construct a new facility that performs the way we define it. As soon as we include US 17 in the purpose statement, US 17 would have to perform within the parameters set. He added that we run a risk when we try to include *operational improvements to existing US 17* in the purpose for the project.

Mike thought it was best to not include congestion relief on US 17 in the purpose and need. Rather, a compelling argument should be made about the need to provide an alternate route across the Cape Fear River for Brunswick County residents travelling to and from Wilmington and New Hanover County.

Tracy noted that the No-Build Capacity Analysis included in the *Traffic Capacity Analysis Memorandum* (URS, 2008) for the Cape Fear Skyway shows several Level of Service (LOS) “F” in both existing year 2008 and the design year 2035. With the Cape Fear Skyway, a question raised was whether those LOSs would likely change. Peter responded that the analysis of the Build Alternatives had not been completed but that he doubted that all “Fs” would be eliminated and that I-140 when built would take traffic off of existing US 17, but it would not likely eliminate congestion. Mike stated that the LRTP has a LOS goal of E for all roadways, although the applicability (mainline only, ramps, signals, etc.) was not well defined in the LRTP. He added the causeway portion of US 17 (from NC 133 to US 421) is one of the most congested segments, but I-140 would alleviate some of that when constructed. Peter noted that it is not likely we would see LOS E or better on US 17 from NC 133 to US 421 without the Cape Fear Skyway being constructed.

Rob stated that if improving existing US 17 is considered a viable alternative, we would need to



determine what improvements would be needed to achieve the stated design goals. It's possible that impacts resulting from improving US 17 could be so extreme that it would prevent its selection as either a detailed study alternative or the preferred alternative.

Mike stated that the LRTP update (currently underway with a completion date of March 2010) would not reflect US 17 as a freeway facility and it was uncertain whether a six-lane superstreet section for US 17 would be proposed.

Rob said again that accommodating the increased traffic demand between Brunswick and New Hanover Counties is still the strongest argument and that expedited defense deployments and improved port access are probably not. Rob stated that the purpose of the project shouldn't be to "improve access to Port," but to improve east-west traffic flow going across the river. He would prefer one or two strong purposes to several more weak ones. With respect to the Cape Fear Skyway, the *Greater Wilmington Urban Area Transportation Plan* (City of Wilmington and NCDOT, March 2001) was good in that it outlines a few basic project goals, but falls short of establishing substantiated project needs. Rob noted that good performance measures are needed (e.g., high speed, LOS), and that for any alternative analyzed the project termini would need to be the same as articulated in the P&N.

Mike distributed a NCSA-commissioned study by the University of Tennessee (attached) that evaluates the impact of moving the Port of Wilmington's north gate and felt it may provide some insight into the trucking operations at the Port. Rob asked how the NCSA was engaged in the local transportation planning process. Mike stated that they are a voting member of the WMPO's Technical Coordinating Committee (TCC) and *ex officio* members of the Transportation Advisory Committee (TAC).

Rob indicated that the traffic data received from the NCSA are not as useful as other information pertaining to the Cape Fear Skyway that has been developed in the previous studies. Peter stated that a travel time study will be conducted as part of the National Environmental Policy Act (NEPA) study to predict the future travel time to and from the Port of Wilmington along truck routes in the region both with and without the Cape Fear Skyway.

A discussion was held about the Origin-Destination (O-D) study. Rob asked if the model broke out trucking, and Mike said it did not. Rob then asked if any truck factors were included in the model. Shane replied only those truck factors drawn from the counts were included. Peter noted that NCDOT has a statewide truck model, but that it is very macroscale. Mike added that trucks are prohibited on Market Street. Rob asked if the LRTP has any specifics with regard to trucks, and Mike explained that there is a freight section. He would have to review this section to provide further information.

A discussion was held about upgrading the existing US 17 alternative. Jennifer stated that this may be a viable alternative, and David added that it becomes problematic at the river crossing because of the additional bridge crossing required and associated direct and indirect effects to residential,



historic and business properties, as well as traffic operations in the downtown area where the project terminates at US 421. Mike stated that there is a plan to upgrade Independence Boulevard to full control of access from Oleander Drive to Martin Luther King Jr. Boulevard. Currently, Independence Boulevard is limited access from Oleander Drive back to the proposed terminus of the Cape Fear Skyway.

Jennifer asked if it's possible to have a LOS E facility that is also "high speed", and what criteria would need to meet a specific LOS, ramps, and mainlines. For the Monroe Connector / Bypass project, high speed was defined as 45 miles per hour. The Gaston East-West Connector project is similar.

It was discussed that population growth is also a critical element in supporting project need. The P&N should state the current population in south Brunswick County, and that it is projected to increase to 100,000 by 2050. Jennifer added that using travel time contour lines should be considered. The need for feeder road secondary improvements should also be discussed.

The traffic movements between the project's starting and ending points need to be evaluated to justify connection between US 17 and US 421 as a project need. The O-D data will be used to support travel demand as it relates to the project termini. Beyond US 421 would be considered areas that would incur indirect traffic effects.

Regarding measures of effectiveness (MOEs), high speed and LOS (e.g., E) and/or derivatives thereof should be considered. Jennifer noted that NCTA may not agree with an LOS of E. Discussion ensued regarding the use of Volume to Capacity (V/C) ratios as a level of measurement.

It was decided that travel time and congestion should be considered as potential options as well. To use LOS as a performance measure, an appropriate LOS must be established and tied to public policy – Mike said that the 2030 LRTP infers a mainline LOS of E. Peter added that there may be some issues or concerns with using the regional model to determine speed or travel time due to it's macro nature and unreliability at such a fine scale.

Regarding the current P&N's 1st purpose bullet – it was agreed that "US 17" should be taken out of the purpose statement, as well as some other terminology such as "reliable" in the 2nd purpose bullet. The project still needs to be consistent with the Strategic Highway Corridor Initiative (SHC) and the North Carolina Intrastate System.

George noted that financial feasibility for funding the highway improvements should be addressed. Mike will talk to Loretta at FHWA about financial feasibility and constraints needs, and how they should be discussed in the LRTP update. Jennifer said that Monroe Connector / Bypass and Gaston East-West Connector projects both have good language for addressing measures for screening alternatives.



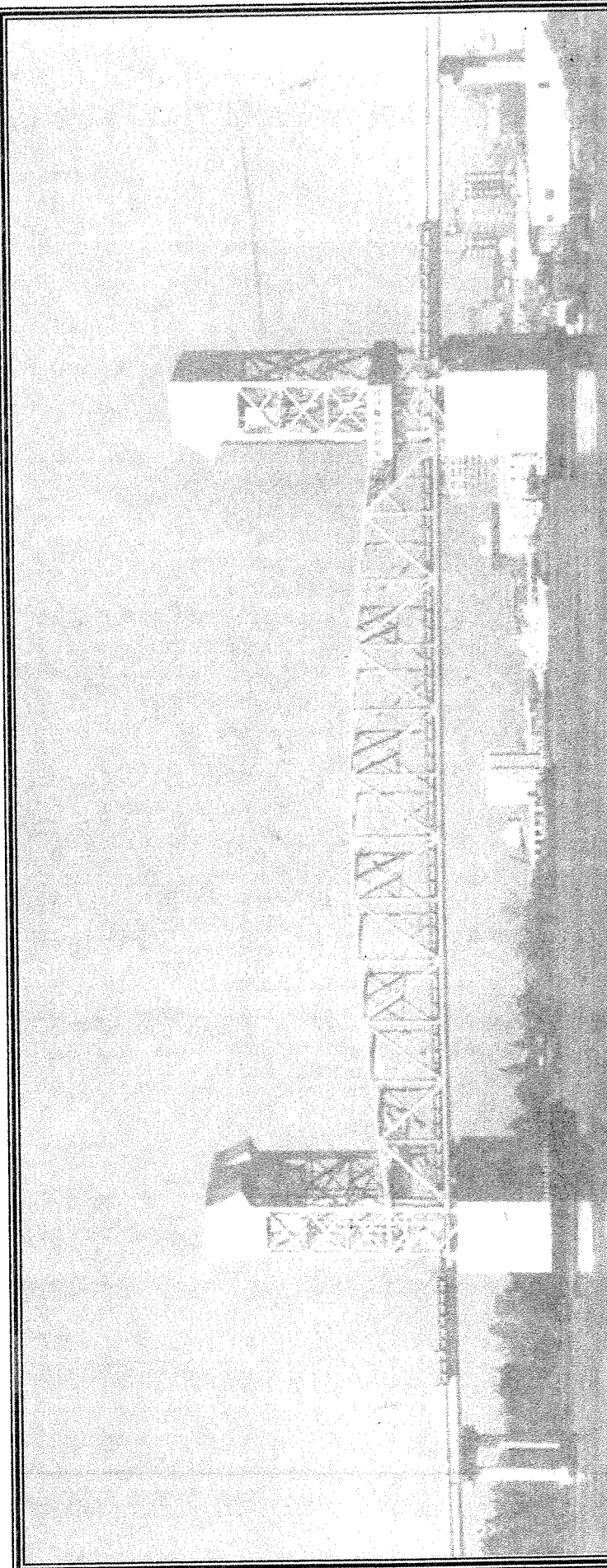
Minutes of August 19, 2009 NCTA Meeting

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Action Items

- Mike is to provide population growth data. *Update: Mike provided population data on 08/20/09.*
- Mike, Peter and Shane will discuss the WMPO travel demand model and its accuracy. Shane to provide model documentation. *Update: Shane provided model documentation to URS on 08/20/09 and Mike and Peter discussed the model on 08/21/09.*
- Mike to provide O-D data from NuStats. *Update: Mike provided O-D data on 08/20/09.*
- A follow-up meeting will be held on September 10th at 1:00 p.m at FHWA.
- URS to develop a draft purpose statement and list of proposed MOEs. This information will be distributed to the meeting attendees one week prior to the September 10th meeting.



Greater Wilmington Urban Area

Transportation Plan

City of Wilmington Transportation Planning
NCDOT-Statewide Planning Branch

March 2001

of the project, and the scheduling of the implementation of the remainder of the project, is imperative to ease congestion in an already congested area that is experiencing rapid growth.

Independence Boulevard

(Randall Parkway to Smith Creek Parkway)

This project has been included in all recent versions of the urban area transportation plan. This connection completes a major north-south corridor from River Road in the south to Smith Creek Parkway in the north.

Southern Bridge

In the 1993 Plan this project extended from Independence Boulevard (formerly Titanium Road) across the Cape Fear River and up Eagle Island to an interchange with US 74/76 at US 421. This Plan recommends that the southern terminus of the project remain Independence Boulevard but that the western terminus be moved to the west and south of the towns of Belville and Leland ending at an interchange with US 74/76 at the southern terminus of the Wilmington US 17 Bypass. The updated computer model determined that this recommendation would alleviate traffic on the bridges crossing the Cape Fear River. It is also in agreement with the 1998 Cape Fear River Corridor Study conducted by the City of Wilmington, New Hanover County, and Brunswick County. Completing this project along with the Brunswick County portion of the US 17 Bypass will form a true urban loop on the western side of the urban area. Expediting the completion of the Brunswick County portion of the US 17 Bypass is very important.

College Road

College Road and Oleander Intersection

This intersection currently handles over 80,000 vehicles per day. It is anticipated that it will carry well over 110,000 vehicles per day in 2025. This crucial nexus will be unable to process this amount of traffic in its current configuration. It is therefore recommended that an interchange be constructed at the intersection of College Road and Oleander Drive. It is recommended that this be a single point urban interchange constructed on the west side of College Road to minimize the impacts in the vicinity of Wrightsville Avenue. It is also recommended that the elevations for this interchange begin prior to Wrightsville Avenue and that the ramp be constructed so that traffic on Wrightsville Avenue and Peachtree can proceed across and under College Road.

College Road Widening

Traffic volumes on College Road will grow from approximately 60,000 vehicles per day to about 80,000 vehicles per day in 2025, due to the lack of alternative routes it is recommended that College Road be widened to eight lanes from I-40 to Shipyard Boulevard.

Kerr Avenue

Kerr Avenue Extension

It is recommended that Kerr Avenue be extended from Peachtree Road to Oleander Drive. This connection should be a right in right out only intersection with Oleander Drive. There should NOT be a median cut of any type for this extension due to the proximity of the College and Oleander intersection. This facility would provide an alternative to Peachtree Road as an outlet for Kerr Avenue.

Thoroughfare Plan

This Plan is an update of the 1993 Wilmington Urban Area Transportation Plan. Unless otherwise noted the roadway recommendations of this Plan are identical to the recommendations of the 1993 Thoroughfare Plan. The following items are recommended changes to the urban area Thoroughfare Plan. The projects listed here are in a random order they are **NOT** listed in order of priority.

Project Recommendations

Village Road Widening

This project on Village Road from Navassa Road to Mount Misery Road is a very high priority. It is proposed that the entire project be 5 lanes with provisions for bicycle travel. A portion of the project from Belville Road to Navassa Road is currently scheduled in the State Transportation Improvement Program for completion in 2005. The rapid implementation of the currently scheduled portion of the project, and the scheduling of the implementation of the remainder of the project, is imperative to ease congestion in an already congested area that is experiencing rapid growth.

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Southern Bridge

In the 1993 Plan this project extended from Titanium Road across the Cape Fear River and up Eagle Island to an interchange with US 74/76 at US 421. This Plan recommends that the southern terminus of the project remain Titanium Road (recently renamed Independence Boulevard) but that the western terminus be moved to the west and south of the towns of Belville and Leland with the western terminus located at an intersection with US 74/76 at the southern terminus of the Wilmington US 17 Bypass. It is recommended that an interchange be constructed at the intersection of these facilities. The updated computer model determined that this recommendation would reduce traffic on the bridges crossing the Cape Fear River it is also in agreement with the 1998 Cape Fear River Corridor Study conducted by the City of Wilmington, New Hanover County, and Brunswick County. The purpose of this project is to reduce the congestion on the existing bridges and to enhance freight mobility.

Southern Outer Loop Deletion

The 1993 Thoroughfare Plan recommended that this project be constructed to connect Masonboro Loop Road to Carolina Beach Road at the southern end, the project also included a connection between Pine Grove Road to the south to Wrightsville Avenue at the northern terminus. Recent development has made this project untenable and therefore this Plan removes this project from the Planned street network.

Purpose & Need Statement

9.5.7 Southern Bridge

Project Location:

This project extends from Independence Boulevard in the vicinity the North Carolina State Ports in the Wilmington, New Hanover County to the Proposed US 17 Bypass in Brunswick County.

Project Recommendation:

It is recommended that a new high rise bridge be built on new location. This project would include a major crossing of the Cape Fear River. The project would serve the NC State Ports, as well as the traveling public in and around the Wilmington Urban Area. This facility would also allow the movement of cruise ships and other ocean going vessels to access the NC State Ports at Wilmington and points further north.

Transportation Demand:

The proposed bridge would serve the inter-modal needs of the NC Ports by providing direct access to the west side of the Cape Fear River for truck traffic coming to and from the Port of Wilmington. It would also address the needs of commuter and tourist trips.

Capacity:

Wilmington is possibly the only port city that has a drawbridge as the gateway into the city. Traffic, especially commuter traffic, consistently backs up on the Cape Fear River Memorial Bridge. Projections for traffic in 2025 at the Cape Fear River Memorial Bridge estimate volumes of 93,700 vehicles per day (vpd) even with the US 17 Bypass, currently under construction in place. Projections for traffic on the Southern Bridge in 2025 anticipate that it will accommodate 30,500 vpd. Thus reducing the volumes on the Cape Fear River Memorial Bridge drastically.

Safety Issues:

The Southern Bridge project will enhance safety on the Wilmington street network by improving access to the City of Wilmington. This project will help reduce congestion and the potential for accidents by providing the street network with additional capacity to handle the needs of this growing community. Due to the location of the facility, ships accessing the NC State Ports at Wilmington must come and go on the tides giving no regard to the peak hour surface traffic. When the tides and peak hour traffic coincide traffic congestion on the Memorial Bridge is at an all time high. There is no way an emergency vehicle or any vehicle for that matter can proceed at an emergency response speed through this area during these recurring peaks.

The Southern Bridge would also help address the need to evacuate the City of Wilmington and/or New Hanover County due to emergency events. It is possible that New Hanover County will need to be evacuated due to hurricanes. Or an incident at either the Brunswick County Nuclear Energy Plant or the General Electric Nuclear Fuel processing plant located on Castle Hayne Road could require evacuation. Raising the bridges or an incident on either of existing drawbridges makes access to southbound US

17 or US 74/76 during emergencies problematic at best. Another non-drawbridge crossing of the Cape Fear River would eliminate this concern.

Social Demands/Economic Development:

The corridor needed for this facility is environmentally sensitive as well as being in the early stages of the development process. Implementing this project in a timely manner is imperative to allow the construction of this important facility in a manner that is sensitive to both environmental and cost issues.

This facility will also enhance ground access to the NC State Ports at Wilmington which handled 2,226,000 tons of freight in FY 2000. This is especially important since the NC State Ports will handle even greater volumes of freight once the ongoing Cape Fear River deepening project is completed.

A large tract of land between US 17 and NC 133 in Brunswick County (~10,000 acres) is in its early stages of development. It is almost inevitable that a portion of the Southern Bridge Project will need to go through this area. The development will include approximately 5,800 acres of mixed-use development and a possibly a nature conservation park. The Brunswick County portion of the Wilmington MPO is growing rapidly. Along with the International Paper Development described above there is residential growth along the river corridor (NC 133) in Belville. There is the Magnolia Green (2000 lot golf development) in Leland in the immediate vicinity of the Project. There is also industrial growth and the beginnings of residential expansion in Navassa.

System Linkage:

This corridor would provide links to US 17 and US 74/76. US 17 is a major artery from New York to Florida. It is currently being improved from the South Carolina State line near Myrtle Beach to the Virginia State line. US 74 gives access to Charlotte.

Modal Interrelationships:

Wilmington has available all modes of transportation that reach all across the world. By the volume of materials moved, the NC State Ports is the largest single freight mover in the area. The Cape Fear River deepening project currently underway will significantly enhance the international competitiveness of the NC State Ports. Providing the State Ports with sufficient ground transportation facilities can be an important enhancement benefit of the \$377 million being invested in the deepening project. The Southern Bridge project will enable Wilmington, the State of North Carolina and the inland ports at Greensboro and Charlotte, to receive even greater benefits from the deepening project.

The Wilmington International Airport is located on 1,500 acres, three miles northeast of historic Wilmington, N.C. A Federal Inspection Station at the airport provides entry, clearance and documentation for foreign flights by U.S. Customs, Department of Agriculture and Immigration and Naturalization.

The Wilmington area is also served by CSX Transportation, a major freight line that provides freight transportation to 20 states, the District of Columbia and Ontario, Canada.

17 or US 74/76 during emergencies problematic at best. Another non-drawbridge crossing of the Cape Fear River would eliminate this concern.

Social Demands/Economic Development:

The corridor needed for this facility is environmentally sensitive as well as being in the early stages of the development process. Implementing this project in a timely manner is imperative to allow the construction of this important facility in a manner that is sensitive to both environmental and cost issues.

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This corridor would provide links to US 17 and US 74/76. US 17 is a major artery from New York to Florida. It is currently being improved from the South Carolina State line near Myrtle Beach to the Virginia State line. US 74 gives access to Charlotte.

Modal Interrelationships:

Wilmington has available all modes of transportation that reach all across the world. By the volume of materials moved, the NC State Ports is the largest single freight mover in the area. The Cape Fear River deepening project currently underway will significantly enhance the international competitiveness of the NC State Ports. Providing the State Ports with sufficient ground transportation facilities can be an important enhancement benefit of the \$377 million being invested in the deepening project. The Southern Bridge project will enable Wilmington, the State of North Carolina and the inland ports at Greensboro and Charlotte, to receive even greater benefits from the deepening project.

The Wilmington International Airport is located on 1,500 acres, three miles northeast of historic Wilmington, N.C. A Federal Inspection Station at the airport provides entry, clearance and documentation for foreign flights by U.S. Customs, Department of Agriculture and Immigration and Naturalization.

The Wilmington area is also served by CSX Transportation, a major freight line that provides freight transportation to 20 states, the District of Columbia and Ontario, Canada.

The Mid-Atlantic and Waccamaw Coastline shortline railroads serve Myrtle Beach, Whiteville, and Chadbourn. CSXT operates Davis classification yard north of Navassa.

The Wilmington Transit Authority, WTA, provides local bus service. WTA also provides paratransit service for disabled individuals. WTA also has a taxi voucher program in place for the visually impaired citizens of Wilmington. Greyhound provides daily inter-city bus service with several departures. Five taxicab companies provide service to the Greater Wilmington Area.

The U.S. Army Corps of Engineers maintains Wilmington Harbor. It has 36 miles of navigation channels, two turning basins and one anchorage basin used for turning the largest ship in the harbor. The entrance channel, 40 feet deep and 500 feet wide, crosses the ocean bar and continues to deep water at Southport. The US Army Corps of Engineers is currently deepening the channel for access to the NC State Ports to 42 feet and north of the Memorial Bridge the Corps is deepening the channel to 38 feet.

The North Carolina State Ports Authority has a major establishment at the Port of Wilmington. They have extensive project shipment capability, including export packaging and inventory control. Both road and rail access are on the grounds. U.S. Customs services, U.S. Department of Agriculture, and Immigration and Naturalization are also present.

Relationship to Other Plans:

This corridor is listed in the Wilmington Urban Area Transportation Advisory Committee's adopted Priority Needs list as the number eight project. It is part of the Greater Wilmington Urban Area MPO Thoroughfare Plan map dated May 3, 1999 as a major thoroughfare. It is anticipated from local input that this Project will be higher on the Urban Area's Priority List after it is updated in the fall of 2001. The Priority List has not been updated since 1999. This project is also in the NCDOT Draft 2002 Transportation Improvement Program (TIP) as an unfunded project as feasibility project #FS-0103D.

It is also included as a high priority in the 1998 Cape Fear River Corridor Study conducted by the City of Wilmington and Brunswick and New Hanover Counties. The Chairman of the New Hanover County Board of Commissioners, Bill Caster, submitted a letter dated November 16, 2000 in support of the Southern Bridge toll road concept to Secretary McCoy, NCDOT. The latest information on the project was developed as part of the Urban Area Transportation Plan adopted in 2000. The Transportation Plan includes the MPO's federal documentation with Financial Plan prepared by the City of Wilmington and the state's technical documentation prepared by NCDOT-Statewide Planning Branch.

Ayers, Rob <FHWA>

From: York, Shane D [sdyork@ncdot.gov]
Sent: Tuesday, August 11, 2009 2:45 PM
To: Stark, Jill <FHWA>; Mike.Kozlosky@wilmingtonnc.gov; Roberts, Tracy
Cc: Hoops, George <FHWA>; Harris, Jennifer; Ayers, Rob <FHWA>
Subject: RE: Purpose and Need Cape Fear Skyway

Hello everyone,

I wrote a draft purpose and need statement for the Cape Fear Skyway for your review. Feel free to edit it as you see fit.

Below this statement I included the old information about the Skyway from the 2001 Brunswick Co Transportation Plan and the 1996 Wilmington Area Thoroughfare Plan as a reference.

Purpose and Need Statement

The purpose of this project is to construct a four-lane divided, full-control access facility on new location with a high rise bridge that allows for a minimum travel speed of 50 mph during peak period between the Bishop/Spring Hill area in Brunswick County and the City of Wilmington's downtown area; and

To accommodate projected traffic (2035 Design Year) by maintaining a Level of Service of E or better on US 17 Business and the Cape Fear Skyway.

Old Statements

From the 2001 Brunswick Co Transportation Plan

Project Recommendation:

It is recommended that a new high rise bridge be built on new location. This project would include a major crossing of the Cape Fear River. The project would serve the NC State Ports, as well as the traveling public in and around Brunswick County and the Wilmington Urban Area. This facility would also allow the movement of cruise ships and other ocean going vessels to access the NC State Ports at Wilmington and Points further north.

Transportation Demand:

The proposed bridge would serve the intermodal needs of the NC Ports by providing direct access to the west side of the Cape Fear River for truck traffic coming to and from the Port of Wilmington. It would also address the needs of commuter and tourist trips.

The Southern Bridge would also help address the need to evacuate the City of Wilmington and or New Hanover County due to emergency events. It is possible that New Hanover County will need to be evacuated due to hurricanes. An incident at either the Brunswick County Nuclear Energy Plant or the General Electric Nuclear Fuel processing plant located on Castle Hayne Road could also require evacuation. Raising the bridges or an incident on either of the existing drawbridges makes access to southbound US 17 or US 74/76 during emergencies problematic. Another non-drawbridge crossing of the Cape Fear River would eliminate this concern.

Southern Bridge Statement from 1996 Wilmington Area Thoroughfare Plan

The Southern Bridge Project is expected to be a long term solution to the growing traffic problems of the Cape Fear Memorial Bridge and the growing congestion on College Road. The downsizing of the Southern Outer Loop has placed an additional importance on this project. Not only does it provide an important link to the NC Port, but it also provides much needed access to southern New Hanover County and its Beaches.

Ayers, Rob <FHWA>

From: Ayers, Rob <FHWA>
Sent: Wednesday, August 12, 2009 8:59 AM
To: 'Mike.Kozlosky@wilmingtonnc.gov'
Subject: Cape Fear Skyway P&N

Mike:
 Thanks for the several documents you forwarded to me. Here are some thoughts for now.

Defense & Ports:

I'm not convinced at this point that the P&N should mention anything related to national defense or the ports. There really isn't anything in your current LRTP that specifically identifies needs related to these two, nor are there really any goals or objectives that we could fall back on (I think your LRTP does a really good job of listing goals and objectives for various modes but surprisingly there aren't any for ports). The documents you sent to me were interesting, but I'm hesitant to say there's sufficient info to document needs in the material. Also, I'm a bit skittish about relying on a source outside of the MPO to articulate a need that originated with the MPO.

Going back to our P&N guidance, if we had a study performed by the DoD or the port that really assessed surface transportation to these facilities, identified desired performance standards and related deficiencies, as well as a communication from DoD/port to the MPO asking for help in solving a deficiency, then I'd be much more comfortable including defense and/or ports in the P&N for this project. Absent such documentation, I don't believe we should include defense or ports as primary purposes.

Also, if we include ports, then the project termini should go all the way to the port (currently does not). If we include defense, then the project termini should start/end at military installations/facilities (currently does not).

Congestion:

I still think this is our best bet. The LRTP contains performance standards (LOS standards) for roads, has existing and future traffic volumes, and so it's fairly easy to make the case with existing data that there's a deficiency that we'd like to correct. The thing I'm still struggling with (and need your input) is whether the MPO really wants to "fix" US 17 or do they want a facility (could be US 17 or could be somewhere else) that operates at a certain level of performance.

If the purpose was something like "*the purpose is to improve US 17 from (point A) to (point B) by (design year) to a (specify level of performance)*", then the two likely alternatives would probably be either adding lanes to US 17 or building a new parallel facility that might draw enough traffic off of US 17 to make it meet the performance level. We just need to be aware that if the purpose is to make US 17 better, then just building a new road by itself may not sufficiently draw enough traffic away from US 17.

If the purpose was something like "*the purpose is to provide a facility from (point A) to (point B) that operates at a (specify level of performance) by (design year)*", then we'd still have the two likely alternatives (widen & new location), but with a new location alternative, the new location alternative would have to meet the purpose but US 17 would not.

So, the big question for you (MPO) is do you want to fix US 17 or do you want a facility that functions acceptably that could be US 17 or could be a new road.

Another question for you would be the termini of the project. In the LRTP section on the origin-destination results, I copied a couple of pages (I think Jill is meeting with you today and I gave them to her) that I think make a convincing argument that a lot of folks from Brunswick County travel to/from Wilmington and southern New Hanover. I just don't know enough about the area to suggest the termini, so you'll need to figure it out.

If we go with congestion as the need, then with the O-D stuff plus the LRTP goals and the traffic numbers (maybe throw in the Strategic Highway Corridor stuff if we want to have a performance of "high speed"), then I think we have a solid purpose & need.

8/19/2009

ASSESSING THE IMPACT OF PORT SECURITY MEASURES ON TRAFFIC OPERATION

Introduction

Many seaports in the United States are experiencing major growth in both container traffic and general cargo. The increased container traffic and general cargo will move in and out through the port gates, and a large portion of this freight movement will be on trucks, which will use the road system providing access to the ports. The Port of Wilmington in North Carolina, for instance, expects container carrying truck movements in and out of the port to double within the next few years from an already busy level of almost 170,000 TEUs in 2006. The ports in North Carolina also handle a high volume of truck movements transporting general cargo. The efficient handling of truck traffic inside as well as outside a port presents a challenge.

Another challenge for the Seaports involves security. Seaports are being directed to increase security measures in the wake of the September 11, 2001 (9/11) terrorist attacks, since they represent a key point for the introduction into this country of weapons and supplies, particularly weapons of mass destruction. In addition, terrorist actions that target the integrity of the ocean shipping system (e.g. ports and vessels) could have significant negative, if not, catastrophic impacts on the U.S. economy. Container shipping is a special concern, because of the significance of containers in international trade and the inherent difficulty in screening container contents.

Since 9/11, The U.S. Department of Homeland Security (DHS) has provided funding to many seaports to implement a variety of security measures at both landside and waterside. These include installation of cameras, changes in vehicle routing, increased documentation requirements for drivers and cargo, and random vehicle checks. The nature and intensity of application of these measures vary according to the national terrorism threat level. The screening of vehicles and drivers associated with security measures has the potential to retard the movement of trucks and railcars into and out of port facilities. When the enhanced security inspections are combined with the increased traffic demand noted above, the result may be serious traffic congestion at port gates. These traffic

problems at gates could cause further problems within a port itself and on the surrounding road network, including negative effects on safety, noise, and air quality.

The purpose of this project is to develop a methodology for investigating the effects of enhanced security measures at port gates on traffic flow at gates and also roads providing access to the ports. The ports of Wilmington and Morehead City in North Carolina, which are operated by the North Carolina State Port Authority (NCSPA), will be used for the case study. Port planners recognize that the security measures being installed or considered may affect landside access. However, there is a lack of a standard methodology for evaluating the effects of security measures at port gates. The goal of this project is to develop a methodology for estimating the impact on highway traffic due to security measures, including queuing and delay. The method will allow the assessment of alternatives and treatments. Port officials, city transportation officials, and state transportation officials will be able to use the methodology presented to identify problems and investigate potential solutions. This will help ensure that security goals are met with the least possible impact on port operations and the surrounding roadway network. Furthermore, it is expected that the analytical approach and experience gained from this case study will be useful for other types of secure areas with high traffic volumes, such as military bases and Federal laboratories.

Data Collection

At the beginning of the study the members of the research team, which includes graduate students and faculty members of the University of Tennessee (UT) and North Carolina State University (NCSU), gathered data at the Port of Wilmington's South Gate and North Gate. Later NCSPA set up security cameras at these port gates and the pictures recorded by video cameras were available for data retrieval. The videos captured the movement of vehicles in and out of the gates and also showed a driver's behavioral pattern with regard to selecting lanes. The cameras also gave information on service time. Additional data were provided by the Division of Highways of the North Carolina Department of Transportation (NCDOT). These include traffic volume at selected locations and intersections and also information on traffic signal timing. Traffic Engineers

of NCDOT's Division office in Greenville provided considerable assistance with signal timing information for an intersection in Morehead City.

The Port of Wilmington's security video provided information for the 11th day of October of 2006, from 7:00AM to 6:00 PM. The Port of Morehead City's security video provided information for the 18th day of September of 2006, from 7:00AM to 6:00 PM. The signal timing data used for the simulation of the intersection outside Morehead City Port gate was dated the 12th day of July of 1995. The traffic volume data used for this intersection is dated the 27th day of May of 2006.

The data retrieved from the sources above were processed and tabulated for input into the VISSIM model. (Information about VISSIM is presented later). Various data items compiled for each port gate are described below:

- * Aerial image for the site;
- * Geometrics of the site;
 - Layout of the facility;
 - Gates and traffic lanes;
 - Scales and x-ray screening portals;
 - Layout of the roadway system outside the facility;
- * Routing of vehicles;
- * Types/configuration of vehicles entering and leaving the facility;
 - Width and length;
 - Desired speed inside and outside the facility;
- * Number of vehicles entering and leaving the gate;
 - Vehicles that stop at gates;
 - Vehicles that do not stop at gates;
- * Service time for each type of vehicles entering and leaving the facility;
 - At Guard Stations (Wilmington and Morehead City);
 - At Interchange Gates (South Gate of Wilmington)
- * Traffic volume at adjacent intersections;
 - Movements for each approach (Morehead City);
- * Train schedule;
 - Frequency of traffic disruption at intersections (Morehead City);

- * Signal timing at Morehead City intersection near the gate;
 - Phasing diagram;
 - Timing chart;
 - Detector's position;
 - Preemption;
- * Cargo forecast

Model Development

To test and analyze scenarios, VISSIM traffic simulation model is used. VISSIM is a microscopic, time-step and behavior-based simulation model designed to analyze a full range of traffic operations. The software is developed and maintained by PTV Traffic Mobility Logistics. Even though the software was not specifically developed for port entrances, some of its capabilities allow for the simulation of these types of facilities. In order to simulate some of the unique operations of a port, which are not explicitly included in VISSIM, certain special adjustments had to be made. VAP (vehicle actuated programming) coding was used to simulate the different levels of security at the Guard Stations. The VISSIM simulator allows for many types of signal controllers to be used. The virtual Econolite ASC/3 2100 module was used in the case involving the intersection just outside the gate at Morehead City port. For the development of the simulation models for Wilmington South Gate and the gate at Morehead City, 15 minutes intervals were used for auto and truck traffic volumes. One hour intervals were used for auto and truck traffic volumes for the North Gate in Wilmington. For the trains, the schedule that was used was provided by the port officials.

South Gate in Wilmington

The Port of Wilmington South Gate entrance is located on Shipyard Boulevard and is designated specifically for container trucks. The current conditions show traffic queues reaching River Road that is located close to the entrance. Burnett Boulevard is the next major road upstream of River Road. Vehicles are serviced first by security guards on the gated Guard Station that has one lane open (out of two possible lanes) for the current configuration. Once inside the facility, cars are diverted towards the offices and container

trucks towards the Interchange Gates. Currently, the Interchange Gates have 4 inbound lanes with 3 of them operational with static scales. Trucks pull up and stop for paperwork, while the weight is automatically measured and transferred to the record system. After the processing of documents, trucks move to a second stage inside the Interchange Gates for chassis inspection by port inspectors.

The exiting vehicles also have to go through the Interchange Gates. Autos go through an open passing lane and container trucks have three outbound lanes with screening (x-ray) portals for radiation detection. At the Guard Station there are three outbound lanes, one open lane, a second lane for x-ray portals (used by customs, if necessary) and a lane with a scale for those container trucks that may like to be weighed. The South Gate configuration is shown in Figure 1.

North Gate in Wilmington

The Port of Wilmington North Gate is located at the intersection of Burnett Boulevard and Myers Boulevard, and is designated specifically for general cargo. Due to the geometry of the adjacent roadway, and also due to the proximity of the Guard Station to the main road (Burnett Boulevard), major queues are likely to spillback along Burnett Boulevard toward Carolina Beach Road, which is a major arterial. The security procedure at the North Gate is simple but may be time consuming. The Guard Station at the North Gate is the only place where vehicles are inspected. The intersection configuration is shown in Figure 2.

Morehead City Gate

The gate of the port of Morehead City is located near the intersection of US 70 (Arendell Street) and Fourth Street. The Port Access Road is connected to US 70. Due to its geometry and a rail line that serves the Port and goes through the middle of the intersection, a 7-phase plus preemption signal controller is used at the intersection. A two-way, single lane road leads to the Port entrance that mostly serves semi-trailer trucks. At the Guard Station, security personnel come to the truck for inspection to open the back door of a trailer and check paperwork. On their way out, vehicles are stopped at the Guard

Station for checkout. Currently, problems arise at the main intersection on US70 during morning and mid-day peak hour. The intersection configuration is shown in Figure 3.

Validation Analysis

The validation data for the Port of Wilmington South Gate is presented in Table 1. The simulation model was validated with current data before future scenarios were run. The data collection points were positioned after the stop sign (Inbound and Outbound) at the Guard Station in order to provide a reading of how many vehicles entered and exit the Port in a one hour period of simulation. After the warm-up time of 300 seconds, the model presented very acceptable readings for the four 15 minute intervals for both Inbound and Outbound movements.

The validation data for the Port of Morehead City is presented in Table 2. The simulation model was validated with current data before future scenarios were run. The data collection points were positioned after the stop sign (Inbound and Outbound) at the Guard Station in order to provide a reading of how many vehicles entered and exit the Port in a one hour period of simulation. The model also presented very acceptable readings for the four 15 minute intervals for both Inbound and Outbound movements.

Table 1 - Validation Analysis

Port of Wilmington South Gate

INBOUNDS (Passing the Gates)

Interval (sec)	Warm-up		15 minutes		15 minutes		15 minutes		15 minutes		1 Hour	
	0-300		300-1200		1200-2100		2100-3000		3000-3900		TOTAL	
	Trucks	Autos	Trucks	Autos	Trucks	Autos	Trucks	Autos	Trucks	Autos	Trucks	Autos
Observation			23	0	15	4	17	8	10	2	65	14
Simulation	3	0	23	1	16	4	15	6	11	1	65	12

OUTBOUNDS (Passing the Gates)

Interval (sec)	Warm-up		15 minutes		15 minutes		15 minutes		15 minutes		1 Hour	
	0-300		300-1200		1200-2100		2100-3000		3000-3900		TOTAL	
	Trucks	Autos	Trucks	Autos	Trucks	Autos	Trucks	Autos	Trucks	Autos	Trucks	Autos
Observation			15	3	14	5	18	5	16	10	63	23
Simulation	1	0	17	4	14	4	17	8	14	7	62	23

Observation data by Video recording. (Source: NC State Ports' camera)

Simulation Data - VISSIM version 4.3

Table 2 - Validation Analysis

Port of Morehead City

INBOUNDS (Passing the Gates)

Interval (sec)	Warm-up		15 minutes		15 minutes		15 minutes		15 minutes		1 Hour	
	0-300		300-1200		1200-2100		2100-3000		3000-3900		TOTAL	
	Trucks	Autos	Trucks	Autos	Trucks	Autos	Trucks	Autos	Trucks	Autos	Trucks	Autos
Observation			17	7	10	3	10	4	3	6	40	20
Simulation	2	1	15	4	11	1	11	6	3	7	40	18

OUTBOUNDS (Passing the Gates)

Interval (sec)	Warm-up		15 minutes		15 minutes		15 minutes		15 minutes		1 Hour	
	0-300		300-1200		1200-2100		2100-3000		3000-3900		TOTAL	
	Trucks	Autos	Trucks	Autos	Trucks	Autos	Trucks	Autos	Trucks	Autos	Trucks	Autos
Observation			12	3	10	11	9	4	7	27	38	45
Simulation	1	2	13	4	9	10	8	3	8	25	38	42

Observation data by Video recording. (Source: NC State Ports' camera)

Simulation Data - VISSIM version 4.3

Scenario Analysis

Scenarios for assessment were developed for different levels of security inspection at the port gates in conjunction with the 5 year growth for the cargo forecast. The current service times retrieved from video data were used for all Guard Stations and the Interchange Gate. Officials of NCSPA provided information for the scenarios. Different combinations of traffic volume and security levels are represented by the 8 different scenarios which are presented below.

Scenarios

Port of Wilmington South and North Gate and Morehead City

Scenarios	Condition			
	Truck Volume	Auto Volume		
			Marsec level	Service time
1	Current	Current	Current	Current
2	Current	Current	1	Current
3	Current	Current	2	Current
4	Current	Current	3	2 minutes
5	5 Year Growth	Current	Current	Current
6	5 Year Growth	Current	1	Current
7	5 Year Growth	Current	2	Current
8	5 Year Growth	Current	3	2 minutes

MARSEC LEVELS

- Current Current observed pattern
- 1 Every 20th vehicle is inspected for at least 2 minutes
- 2 Every 10th vehicle is inspected for at least 2 minutes
- 3 Every vehicle is inspected for at least 2 minutes

Note: *** One inbound lane open for all scenarios.

The 5 year growth forecast is presented in Table 3 and the projected increase in truck volume for the South Gate in Wilmington is 101.9%, from 94,103 gate moves in 2007 to 190,000 gate moves in 2012. The projected increase in truck volume for the North Gate in Wilmington is 58.55%, from 1,790,078 short tons in 2007 to 2,838,338 short tons in 2012. The projected increase in truck volume for the Port of Morehead City is 109.8%, from 644,407 short tons in 2007 to 1,351,518 short tons in 2012. Auto volume was assumed to have not changed for this time period in all facilities.

Data collection points were located before and after the Guard Stations to create a one mile long travel time section and record the delay experienced by drivers to access and exit the facilities. The values presented for delay represent the average total delay per vehicle (in seconds). The total delay is computed for every vehicle completing the travel time section by subtracting the theoretical (ideal) travel time from the real travel time.

Queue counters were positioned just upstream of the Guard Station Inbound and Outbound stop sign for all models (Port of Wilmington South Gate and North Gate and Port of Morehead City) . For the Port of Wilmington South Gate, queue counters were also positioned at the front of the Interchange Gates.

For the average queue length value presented in the tables, the current queue length is measured upstream at every time step. From these values the arithmetical average is computed for every time interval. For the maximum queue length value the queue length is measured upstream at every time step. From these values the maximum is computed for every time interval.

Table 3 - Cargo Forecast

	Wilmington		Morehead City
YEAR	South Gate (moves)	North Gate (short tons)	(short tons)
2004	53,521.00	1,387,350.00	771,307.00
2005	73,060.00	1,856,612.00	851,240.00
2006	90,565.00	2,094,381.00	961,827.00
2007	94,103.00	1,790,078.00	644,407.00
2008	123,960.00	2,382,000.00	974,000.00
2009	135,000.00	2,303,800.00	1,193,610.00
2010	155,000.00	2,447,890.00	1,276,298.00
2011	163,000.00	2,776,028.00	1,273,367.00
2012	190,000.00	2,838,338.00	1,351,518.00

For each scenario 20 different simulation runs were performed and the variations were examined. Results are presented in Tables 4, 5, 6 and 7.

South Gate in Wilmington

Table 4 - Scenario Analysis
Port of Wilmington South Gate

Scenario	# Runs	Variable	GUARD STATION							
			INBOUNDS (seconds)				OUTBOUNDS (seconds)			
			Mean	S.D.	Min	Max	Mean	S.D.	Min	Max
1	20	Delay	46.13	14.04	33.40	80.10	31.47	1.63	27.80	34.90
		Avg. queue	41.91	15.48	26.80	85.28	32.00	2.27	26.00	37.00
		Maxqueue	301.60	79.03	205.00	522.00	213.60	37.47	179.00	302.00
2	20	Delay	59.00	8.66	40.30	72.00	31.47	1.63	27.80	34.90
		Avg. queue	55.33	11.10	33.37	78.40	32.00	2.27	26.00	37.00
		Maxqueue	334.00	84.28	223.00	503.00	213.60	37.47	179.00	336.00
3	20	Delay	90.38	12.63	63.70	113.80	31.47	1.63	27.80	34.90
		Avg. queue	93.93	16.43	58.11	119.62	32.00	2.27	26.00	37.00
		Maxqueue	424.10	101.82	279.00	640.00	213.60	37.47	179.00	336.00
4	20	Delay	1381.33	207.19	1031.70	1842.10	31.47	1.63	27.80	34.90
		Avg. queue	1482.43	89.88	1276.42	1649.09	32.00	2.27	26.00	37.00
		Maxqueue	2510.35	157.48	2073.00	2717.00	213.60	37.47	179.00	336.00
5	20	Delay	787.54	41.85	718.40	878.80	53.52	3.03	47.70	59.20
		Avg. queue	2405.58	76.10	2270.14	2524.45	107.10	10.26	90.00	133.00
		Maxqueue	4717.45	182.79	4310.00	5066.00	423.20	76.97	302.00	581.00
6	20	Delay	794.36	48.39	669.20	861.30	53.52	3.03	47.70	59.20
		Avg. queue	2286.81	86.55	2127.63	2433.09	107.10	10.26	90.00	133.00
		Maxqueue	4451.65	176.14	4116.00	4725.00	423.20	76.97	302.00	581.00
7	20	Delay	835.17	103.94	523.10	1020.20	53.52	3.03	47.70	59.20
		Avg. queue	2398.59	91.24	2217.68	2582.92	107.10	10.26	90.00	133.00
		Maxqueue	4490.85	189.46	4119.00	4767.00	423.20	76.97	302.00	581.00
8	20	Delay	1529.45	287.85	1180.50	2276.70	53.52	3.03	47.70	59.20
		Avg. queue	3633.87	41.60	3570.63	3748.06	107.10	10.26	90.00	133.00
		Maxqueue	5280.00	0.00	5280.00	5280.00	423.20	76.97	302.00	581.00

Observations:

Distance from the Guard Station Gate to the closest intersection - **250.00 ft**

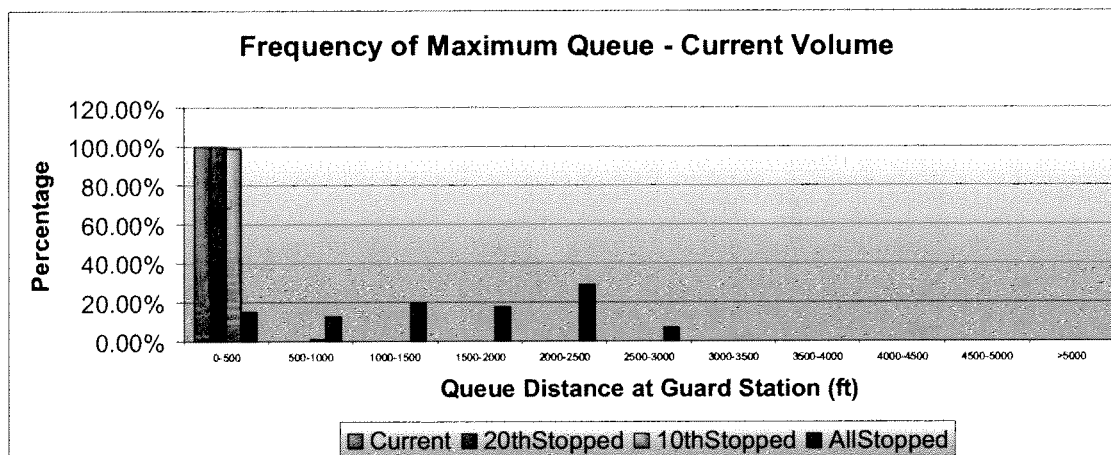
Distance from the Guard Station Gate to Burnett Boulevard - **720.00 ft**

Delay (seconds) – Avg. queue and Max queue (ft)

For current truck volume, the results presented for the Port of Wilmington South Gate show that the ‘average’ queue does not interfere with the closest intersection, on River Road, for Marsec levels ‘current’, 1 and 2. ‘Average’ queue for Marsec level 3 will

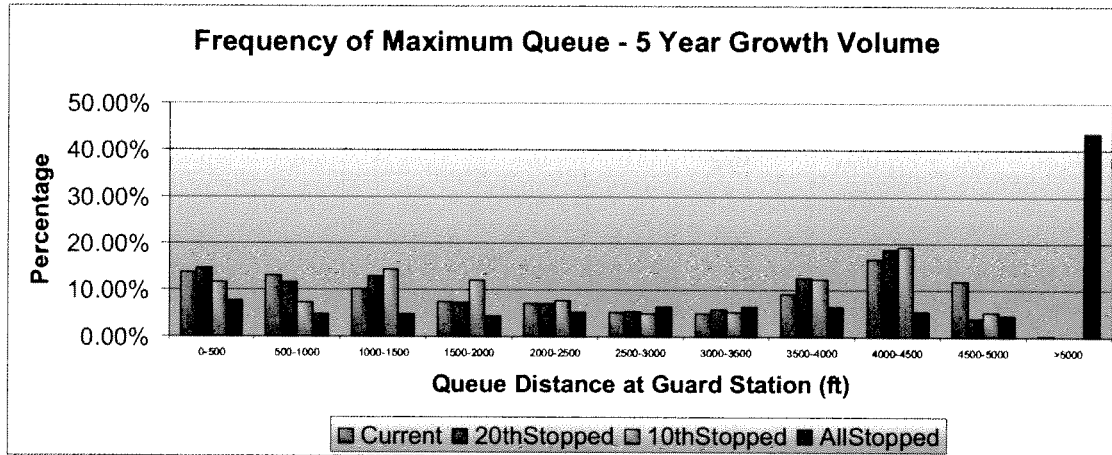
interfere with the intersection of Shipyard Boulevard with River Road as well as with Burnett Boulevard. 'Maximum' queue will block the intersection of River Road located 250 ft upstream from the Guard Station for all Marsec levels. The intersection of Shipyard Boulevard and Burnett Boulevard, located 720 ft upstream from the Guard Station will not be affected by 'maximum' queue with Marsec levels 'current', 1 and 2. 'Maximum' queue for Marsec level 3 will block the intersection of Shipyard Boulevard and Burnett Boulevard. Values of delay are acceptable for Marsec levels 'current', 1 and 2, not exceeding 90 seconds on average. For Marsec level 3, where every vehicle is inspected for at least 2 minutes, the delay is very large and not acceptable.

The frequency for the 'maximum' queue for the current volume is shown below:



For the 5 year cargo growth forecast, the intersection of Shipyard Boulevard with Burnett Boulevard, located 720 ft upstream from the Guard Station, will be blocked for all Marsec levels. Values of delay will increase for Marsec levels 'current', 1 and 2 due to longer queues.

The frequency for the 'maximum' queue for the 5 year cargo growth forecast is shown below:



Inside the Port, the 'average' queue for scenarios 1 through 4 is accommodated between the Guard Station and the Interchange Gates. For scenarios 1, 2, 3, 5, 6 and 7 the 'maximum' queue will spillback to the Guard Station causing further queues and delay outside the Port. For Scenarios 4 and 8 this will not happen due to all vehicles being queued outside the Guard Station. No major problems were detected for the outbound lanes for all scenarios. Maximum values for Maximum Queue are shown in Figure 4.

Table 5 - Scenario Analysis
Port of Wilmington South Gate

Scenario	# Runs	Variable	INTERCHANGE GATES			
			INBOUNDS (ft)			
			Mean	S.D.	Min	Max
1	20	Avg. queue	324.55	51.77	236.00	427.00
		Maxqueue	623.55	125.54	400.00	725.00
2	20	Avg. queue	271.10	55.50	195.00	381.00
		Maxqueue	530.15	160.01	300.00	725.00
3	20	Avg. queue	265.60	78.96	188.00	535.00
		Maxqueue	526.50	146.88	343.00	725.00
4	20	Avg. queue	15.20	3.71	8.00	22.00
		Maxqueue	117.35	6.98	108.00	139.00
5	20	Avg. queue	725.00	0.00	725.00	725.00
		Maxqueue	725.00	0.00	725.00	725.00
6	20	Avg. queue	725.00	0.00	725.00	725.00
		Maxqueue	725.00	0.00	725.00	725.00
7	20	Avg. queue	725.00	0.00	725.00	725.00
		Maxqueue	725.00	0.00	725.00	725.00
8	20	Avg. queue	31.85	8.08	20.00	47.00
		Maxqueue	128.35	16.69	111.00	176.00

North Gate in Wilmington

Table 6 - Scenario Analysis
Port of Wilmington North Gate

Scenario	# Runs	Variable	GUARD STATION							
			INBOUNDS				OUTBOUNDS			
			Mean	S.D.	Min	Max	Mean	S.D.	Min	Max
1	20	Delay	176.05	73.54	82.20	311.10	17.20	7.74	9.90	37.70
		Avg. queue	196.08	88.65	86.75	340.42	7.90	1.59	6.00	12.00
		Maxqueue	579.70	272.51	304.00	1128.00	145.90	38.96	109.00	255.00
2	20	Delay	424.53	128.30	205.40	656.60	17.20	7.74	9.90	37.70
		Avg. queue	311.34	109.02	150.86	497.75	7.90	1.59	6.00	12.00
		Maxqueue	902.10	463.81	435.00	1740.00	145.90	38.96	109.00	255.00
3	20	Delay	264.36	72.02	128.10	345.00	17.20	7.74	9.90	37.70
		Avg. queue	515.80	163.42	214.85	842.37	7.90	1.59	6.00	12.00
		Maxqueue	1454.50	501.78	677.00	2167.00	145.90	38.96	109.00	255.00
4	20	Delay	1258.16	139.74	1076.30	1455.50	17.20	7.74	9.90	37.70
		Avg. queue	2317.80	410.71	1694.08	3125.15	7.90	1.59	6.00	12.00
		Maxqueue	5170.40	262.59	4524.00	5280.00	145.90	38.96	109.00	255.00
5	20	Delay	224.79	125.12	77.40	524.50	22.41	4.62	14.50	30.30
		Avg. queue	305.21	188.35	135.40	756.65	10.60	2.17	8.00	15.00
		Maxqueue	836.90	438.16	381.00	1602.00	134.60	22.43	106.00	177.00
6	20	Delay	479.54	128.29	244.80	741.40	22.41	4.62	14.50	30.30
		Avg. queue	450.48	194.68	223.72	756.26	10.60	2.17	8.00	15.00
		Maxqueue	1326.60	569.55	691.00	2651.00	134.60	22.43	106.00	177.00
7	20	Delay	320.54	103.90	163.40	548.60	22.41	4.62	14.50	30.30
		Avg. queue	794.90	283.56	369.06	1358.42	10.60	2.17	8.00	15.00
		Maxqueue	2238.70	605.79	1327.00	3271.00	134.60	22.43	106.00	177.00
8	20	Delay	1294.76	138.20	1083.20	1472.90	22.41	4.62	14.50	30.30
		Avg. queue	2611.68	351.07	2062.91	3198.75	10.60	2.17	8.00	15.00
		Maxqueue	5280.00	44.97	5182.00	5280.00	134.60	22.43	106.00	177.00

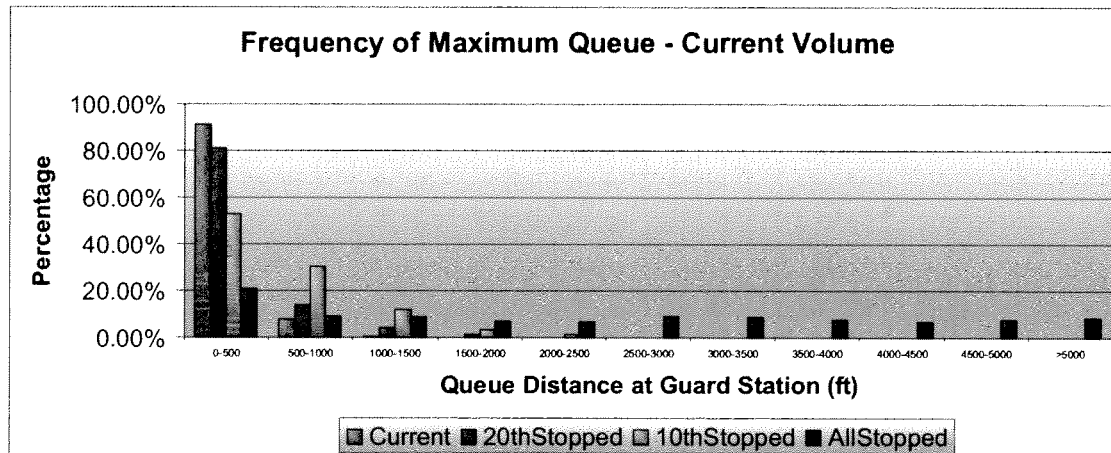
Observations:

Delay (seconds) – Avg. queue and Max queue (ft)

For current truck volume, the results presented for the Port of Wilmington North Gate show that the ‘average’ queue for Marsec levels ‘current’ and 2 are accommodated in the auxiliary lane on Burnett Boulevard. Marsec levels 1 and 3 will produce queues on Burnett Boulevard. ‘Maximum’ queue for all Marsec levels will produce queues on

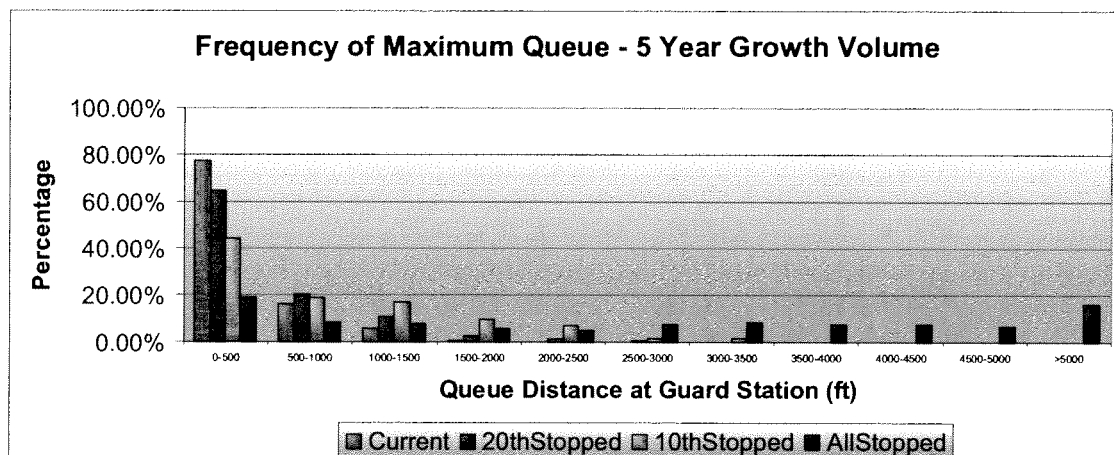
Burnett Boulevard. Values of delay for Marsec levels 1, 2 and 3 are exceeding 5 minutes and are not acceptable.

The frequency for the 'maximum' queue for the current volume is shown below:



For the 5 year cargo growth forecast, only the Marsec level 'current' will accommodate the 'average' queue on the auxiliary lane. 'Maximum' queue for all Marsec levels will produce queues on Burnett Boulevard. Values of delay are not acceptable for Marsec levels 1, 2 and 3, exceeding 5 minutes.

The frequency for the 'maximum' queue for the 5 year cargo growth forecast is shown below:



No major problems were detected for the outbound lanes for all scenarios.

Maximum values for Maximum Queue are shown in Figure 5.

Morehead City

Table 7 - Scenario Analysis

Port of Morehead City

Scenario	# Samples	Variable	GUARD STATION							
			INBOUNDS				OUTBOUNDS			
			Mean	S.D.	Min	Max	Mean	S.D.	Min	Max
1	20	Delay	360.79	167.19	129.20	695.00	24.23	3.21	19.20	28.60
		Avg. queue	301.10	133.33	147.00	582.00	16.80	3.08	12.00	22.00
		Maxqueue	654.80	116.83	482.00	822.00	193.60	46.08	121.00	266.00
2	20	Delay	437.72	199.37	145.30	792.90	24.23	3.21	19.20	28.60
		Avg. queue	361.70	153.57	168.00	650.00	16.80	3.08	12.00	22.00
		Maxqueue	693.60	125.08	559.00	904.00	193.60	46.08	121.00	266.00
3	20	Delay	584.44	198.89	251.30	905.40	24.23	3.21	19.20	28.60
		Avg. queue	444.10	187.80	148.00	757.00	16.80	3.08	12.00	22.00
		Maxqueue	754.60	122.29	682.00	991.00	193.60	46.08	121.00	266.00
4	20	Delay	1413.14	150.66	1027.30	1615.20	24.23	3.21	19.20	28.60
		Avg. queue	1140.00	180.06	808.00	1503.00	16.80	3.08	12.00	22.00
		Maxqueue	1795.00	148.43	1675.00	2073.00	193.60	46.08	121.00	266.00
5	20	Delay	1348.21	59.95	1285.50	1489.00	82.28	26.74	52.80	137.10
		Avg. queue	2590.40	215.56	2161.00	3043.00	141.87	48.20	82.00	245.00
		Maxqueue	3814.60	294.32	3484.00	4139.00	576.13	95.30	377.00	671.00
6	20	Delay	1423.49	59.86	1313.30	1531.10	82.28	26.74	52.80	137.10
		Avg. queue	2785.80	196.36	2398.00	3200.00	141.87	48.20	82.00	245.00
		Maxqueue	3950.20	244.72	3658.00	4288.00	576.13	95.30	377.00	671.00
7	20	Delay	1377.07	61.89	1304.90	1500.80	82.28	26.74	52.80	137.10
		Avg. queue	2658.60	209.15	2250.00	3112.00	141.87	48.20	82.00	245.00
		Maxqueue	4192.40	212.53	3899.00	4411.00	576.13	95.30	377.00	671.00
8	20	Delay	1730.41	105.21	1583.00	2005.00	82.28	26.74	52.80	137.10
		Avg. queue	3471.47	150.50	3131.00	3740.00	141.87	48.20	82.00	245.00
		Maxqueue	5280.00	0.00	5280.00	5280.00	576.13	95.30	377.00	671.00

Observations:

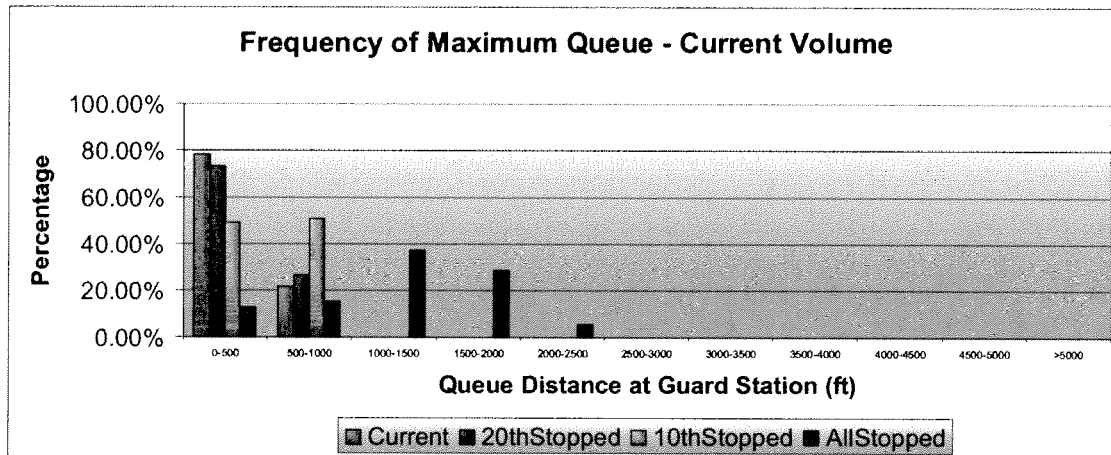
Distance from the Guard Station Gate to the closest intersection - **1,140.00 ft**

Delay (seconds) – Avg. queue and Max queue (ft)

For current truck volume, the results presented for the Port of Morehead City show that the ‘average’ queue does not interfere with the intersection of the Port Access Road and US 70 (located 1,140 ft upstream from the Guard Station), for Marsec levels ‘current’, 1 and 2. However, ‘average’ queue will spillback about 60 ft into US 70 for Marsec level 3. ‘Maximum’ queue does not interfere with the intersection of the Port Access Road and US 70, for Marsec levels ‘current’, 1 and 2. ‘Maximum’ queue will spillback 578 ft on

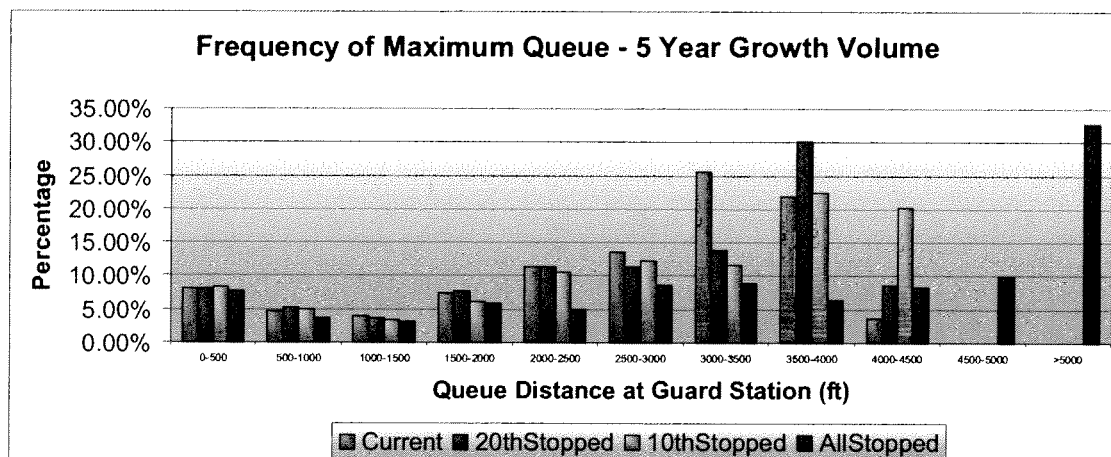
average into US 70 for Marsec level 3. Values of delay are excessive for Marsec levels 'current', 1 and 2 ranging from 360 seconds to 584 seconds on average. For Marsec level 3, where every vehicle is inspected for at least 2 minutes, the delay is fairly large.

The frequency for the 'maximum' queue for the current volume is shown below:



For the 5 year cargo growth forecast, the 'average' and the 'maximum' queue interfere with the intersection of the Port Access Road and US 70, for all Marsec levels. Values of delay are totally not acceptable for all Marsec levels.

The frequency for the 'maximum' queue for the 5 year cargo growth forecast is shown below:



No major problems were detected for the outbound lanes for all scenarios.

Maximum values for Maximum Queue are shown in Figure 6.

Final Comments

The Port of Wilmington South Gate and North Gate and the Port of Morehead City were used to develop a methodology for investigating the effects of enhanced security measures at port gates on traffic flow at gates and also on roads providing access to the port. The methodology included extensive data collection, a simulation model development and scenarios analysis.

The application of VISSIM simulation proved to be an effective tool to identify probable problems and generate information for NCSPA and other agencies (e.g., NCDOT and the cities for needed changes of the infrastructure to accommodate the enhanced security procedures that may be required in the future.

Additional Data on Traffic Flow, Traffic Composition and Service Time for the video observations is presented in Tables 8 through Table 13.

Table 8 - Traffic Flow Study

Port of Wilmington South Gate

(Observed data) Date: October 11, 2006

GUARD STATION

	INBOUNDS		OUTBOUNDS		1 Hour Volume		INBOUNDS		OUTBOUNDS		1 Hour Volume
Time	Trucks	Autos	Trucks	Autos		Time	Trucks	Autos	Trucks	Autos	
0700-0715	5	7	0	0		1230-1245	10	12	0	3	142
0715-0730	3	14	0	0		1245-1300	13	21	3	6	132
0730-0745	3	30	0	0		1300-1315	7	10	4	7	116
0745-0800	4	25	0	2	93	1315-1330	12	4	13	5	130
0800-0815	6	19	1	7	114	1330-1345	13	4	17	1	140
0815-0830	11	7	9	2	126	1345-1400	17	6	3	15	138
0830-0845	5	6	19	7	130	1400-1415	19	1	28	3	161
0845-0900	11	8	9	5	132	1415-1430	12	1	11	4	155
0900-0915	7	2	9	4	121	1430-1445	23	0	15	3	161
0915-0930	9	4	10	5	120	1445-1500	15	4	14	5	158
0930-0945	4	5	6	4	102	1500-1515	17	8	18	5	155
0945-1000	10	6	12	7	104	1515-1530	10	2	16	10	165
1000-1015	5	6	4	2	99	1530-1545	11	4	18	4	161
1015-1030	8	5	8	5	97	1545-1600	14	4	12	7	160
1030-1045	5	4	9	4	100	1600-1615	7	1	16	5	141
1045-1100	10	3	9	1	88	1615-1630	9	3	17	6	138
1100-1115	8	2	7	5	93	1630-1645	3	1	12	10	127
1115-1130	8	12	13	5	105	1645-1700	1	4	9	30	134
1130-1145	4	8	9	8	112	1700-1715	0	1	2	43	151
1145-1200	9	5	9	30	142	1715-1730	0	0	1	11	128
1200-1215	6	10	3	25	164	1730-1745	0	0	0	1	103
1215-1230	10	8	0	2	146	1745-1800	0	2	0	4	65
TOTAL							151	196	146	130	

Table 9 - Traffic Composition
Port of Wilmington South Gate
(Observed data)

Guard Station								
INBOUNDS								
	14:30 - 14:45		14:45 - 15:00		15:00 - 15:15		15:15 - 15:30	
Vehicle Type	Stop	Non-stopping	Stop	Non-stopping	Stop	Non-stopping	Stop	Non-stopping
1	0	0	1	1	3	1	1	0
2	0	0	1	1	2	2	1	0
3	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0
5	5	0	3	0	3	0	2	0
6	17	1	11	1	13	1	8	0
7	0	0	0	0	0	0	0	0
TOTAL	22	1	16	3	21	4	12	0
	23		19		25		12	

OUTBOUNDS								
	14:30 - 14:45		14:45 - 15:00		15:00 - 15:15		15:15 - 15:30	
Vehicle Type	Stop	Non-stopping	Stop	Non-stopping	Stop	Non-stopping	Stop	Non-stopping
1	1	0	1	2	1	2	2	4
2	1	1	1	1	1	1	2	2
3	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0
6	15	0	14	0	18	0	16	0
7	0	0	0	0	0	0	0	0
TOTAL	17	1	16	3	20	3	20	6
	18		19		23		26	

*** Stop - vehicles stopped for service
Non-stopping - vehicles not stopped for service

*** Vehicle types
1 - Car
2 - Pick-up and SUV
3 - Van
4 - Bobtail
5 - 20' Container Truck
6 - 40' Container Truck
7 - Other large trucks

Table 10 - Service Time Distribution

Port of Wilmington South Gate

(Observed data)

Guard Station				Interchange Gates			
INBOUNDS				INBOUNDS			
Vehicle Types				Vehicle Types			
1 & 2		5 & 6		STAGE 1		STAGE 2	
Time (sec)	Cum. Distr.	Time (sec)	Cum. Distr.	Time (sec)	Cum. Distr.	Time (sec)	Cum. Distr.
MIN 1.2	0%	MIN 1.8	0%	MIN 43.0	0%	MIN 44.0	0%
10.0	40%	10.0	50%	82.4	15%	110.8	15%
20.0	50%	20.0	75%	133.5	50%	146.0	50%
30.0	60%	30.0	90%	180.8	75%	191.0	75%
40.0	70%	40.0		271.3	95%	231.1	95%
50.0	88%	50.0		MAX 657.0	100%	MAX 423.0	100%
60.0	94%	MAX 60.2	100%				
MAX 95.0	100%						
OUTBOUNDS				OUTBOUNDS			
Vehicle Types				Vehicle Types			
1 & 2		5 & 6					
Time (sec)	Cum. Distr.	Time (sec)	Cum. Distr.				
MIN 1.6	0%	MIN 6.6	0%				
10.0	75%	10.0	6%				
20.0	85%	20.0	63%				
30.0	90%	30.0	90%				
40.0		40.0	94%				
MAX 42.9	100%	50.0					
		60.0					
		MAX 66.8	100%				

Average Service time = 15.5 seconds

Standard Deviation = 19.0 seconds

***** Vehicle types**

- 1 - Car
- 2 - Pick-up and SUV
- 3 - Van
- 4 - Bobtail
- 5 - 20' Container Truck
- 6 - 40' Container Truck
- 7 - Other large trucks

Table 11 - Traffic Flow Study

Port of Morehead City

(Observed data)

GUARD STATION

INBOUNDS					1 Hour Volume	INBOUNDS					1 Hour Volume
Time	Trucks	Autos	Trucks	Autos		Time	Trucks	Autos	Trucks	Autos	
0700-0715	3	16	3	0		1215-1230	10	4	8	8	134
0715-0730	4	7	4	0		1230-1245	7	9	4	8	128
0730-0745	7	23	1	1		1245-1300	3	4	10	6	124
0745-0800	3	29	10	2	113	1300-1315	8	4	6	7	106
0800-0815	10	15	8	4	128	1315-1330	13	2	7	4	102
0815-0830	5	4	7	1	130	1330-1345	8	7	11	2	102
0830-0845	15	4	6	5	128	1345-1400	8	2	11	2	102
0845-0900	10	1	12	2	109	1400-1415	12	3	12	3	107
0900-0915	11	7	10	5	105	1415-1430	9	1	10	3	104
0915-0930	7	8	11	1	115	1430-1445	6	3	14	5	104
0930-0945	11	4	5	3	108	1445-1500	10	1	7	7	106
0945-1000	9	4	13	1	110	1500-1515	10	2	10	5	103
1000-1015	13	4	9	3	106	1515-1530	12	3	8	1	104
1015-1030	10	4	12	5	110	1530-1545	6	5	11	4	102
1030-1045	13	7	9	1	117	1545-1600	8	1	9	10	105
1045-1100	5	8	9	5	117	1600-1615	12	1	8	8	107
1100-1115	11	10	7	7	123	1615-1630	2	0	6	3	94
1115-1130	17	7	12	3	131	1630-1645	3	0	4	3	78
1130-1145	10	3	10	11	135	1645-1700	1	2	2	12	67
1145-1200	10	4	9	4	135	1700-1715	0	0	2	29	69
1200-1215	3	6	7	27	143	1715-1730	0	1	0	4	63
						1730-1745	2	0	0	5	60
						1745-1800	0	1	0	2	46
						TOTAL	187	175	174	91	

Table 12 - Traffic Composition
Port of Morehead City
(Observed data)

Guard Station

INBOUNDS

Vehicle Type	11:15 - 11:30		11:30 - 11:45		11:45 - 12:00		12:00 - 12:15	
	Stop	Non-stopping	Stop	Non-stopping	Stop	Non-stopping	Stop	Non-stopping
1	2	1	1	0	1	0	2	1
2	2	1	1	0	1	1	1	1
3	1	0	1	0	1	0	1	0
4	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0
6	17	0	10	0	10	0	3	0
7	0	0	0	0	0	0	0	0
TOTAL	22	2	13	0	13	1	7	2
	24		13		14		9	

OUTBOUNDS

Vehicle Type	11:15 - 11:30		11:30 - 11:45		11:45 - 12:00		12:00 - 12:15	
	Stop	Non-stopping	Stop	Non-stopping	Stop	Non-stopping	Stop	Non-stopping
1	1	0	3	2	2	0	4	8
2	2	0	3	3	2	0	4	8
3	0	0	0	0	0	0	3	0
4	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0
6	12	0	10	0	9	0	7	0
7	0	0	0	0	0	0	0	0
TOTAL	15	0	16	5	13	0	18	16
	15		21		13		34	

*** **Stop** - vehicles stopped for service
Non-stopping - vehicles not stopped for service

*** **Vehicle types**
1 - Car
2 - Pick-up and SUV
3 - Van
4 - Bobtail
5 - 20' Container Truck
6 - 53' Semitrailer Truck
7 - Other large trucks

Table 13 - Service Time Distribution

Port of Morehead City

(Observed data)

Guard Station

INBOUNDS

Vehicle Types

1 & 2			3 & 4			5 & 6		
	Time (sec)	Cum. Distr.		Time (sec)	Cum. Distr.		Time (sec)	Cum. Distr.
MIN	1.2	0%	MIN	1.4	0%	MIN	64.4	0%
	10.0	70%		10.0	45%		65.0	85%
	20.0	80%		20.0	55%		75.0	90%
	30.0	85%		25.0	88%	MAX	90.0	100%
	40.0	92%	MAX	40.5	100%			
MAX	92.1	100%						

OUTBOUNDS

Vehicle Types

1 & 2			3 & 4			5 & 6		
	Time (sec)	Cum. Distr.		Time (sec)	Cum. Distr.		Time (sec)	Cum. Distr.
MIN	1.4	0%	MIN	1.1	0%	MIN	1.4	0%
	10.0	85%		10.0	67%		10.0	60%
	20.0	95%		30.0	90%		15.0	80%
	54.9	100%	MAX	54.4	100%		30.0	90%
MAX						MAX	47.0	100%

***** Vehicle types**

- 1 - Car
- 2 - Pick-up and SUV
- 3 - Van
- 4 - Bobtail
- 5 - 20' Container Truck
- 6 - 53' Semitrailer Truck
- 7 - Other large trucks



MEMORANDUM

To: Tracy Roberts, NCTA

From: Joanna Harrington, URS

Date: September 2, 2009

Subject: Meeting Notes to File
August 27, 2009 at 1:00 PM
North Carolina Turnpike Authority – Cape Fear Skyway Project
STIP U-4738

Attendees:

Steve Wilson	Progress Energy Corporation (PEC)
Cooper Dwiggin	PEC
Buzz Bryson	PEC
Bob Wojnarowski	PEC
Baxter Matheson	PEC
Stephanie Ayers	North Carolina State Ports Authority (NCSPA)
Mark Blake	NCSPA
LT Chris Vargo	United States Coast Guard
Mike Kozlosky*	Wilmington Urban Area Metropolitan Planning Organization
Tom Wallace	United States Army Corps of Engineers
Jared Hollemon	Yang Ming America
William Heu	Wilmington-Cape Fear River Pilots Association
Cameron Weaver	North Carolina Department of Environment and Natural Resources
Patrick Riddle	North Carolina Department of Transportation (NCDOT) – Division 3
Chad Kimes	NCDOT – Division 3
Tracy Roberts, AICP	North Carolina Turnpike Authority
David Griffin, CEP	URS
Joanna Harrington	URS

** Joined by phone.*

A meeting was held on August 27, 2009 at Progress Energy Corporation (PEC) in Leland, NC to discuss the dual circuit transmission lines that currently cross the Cape Fear River just south of the North Carolina State Ports Authority's (NCSPA) Port of Wilmington. Buzz began the meeting by stating that PEC received a letter from the United States Army Corps of Engineers (USACE) on June 25, 2009 (see attached) indicating that PEC needs to coordinate with the United States Coast Guard (USCG), NCSPA, and USACE to determine if the existing transmission lines over the Cape Fear River will need to be modified to safely accommodate future navigation needs. Steve gave a brief



overview of the existing transmission lines, stating that they are parallel lines until they come together at a “dead end” just before the Cape Fear River, where they then cross the Cape Fear River on one set of transmission towers. He explained that recent changes to Federal Energy Regulatory Commission standards state that two circuits on one tower (as is the case today) must have a backup circuit in the event that there is a loss of one line’s power. The single line that crosses the Cape Fear River could become overloaded and therefore must have a backup line circuit; therefore, PEC is planning a new line coming off of the existing line either north or south (or possibly underground) of the existing line over the Cape Fear River. This line would only be a backup to the current transmission line, and would not be charged. There would be three circuits total with the new line. PEC is planning the new line to be similar to the existing line, with a possible “H tower” at the same elevation. PEC is not proposing changes to the existing lines, which would remain in place as they are today. The new bypass circuit must be in place and operational by June 1, 2012.

Bob went over the current schedule for construction of the new transmission line (see attached). PEC is currently developing alternative routes, with a projected completion date of January 2010. Once these routes are analyzed, a preferred route will be selected and presented to the public in a series of workshops. An environmental analysis will be performed, and permits obtained, and a certificate must be obtained from the North Carolina Utilities Commission before construction of the new line could begin. He explained that there are issues on the east side of the Cape Fear River due to the proposed commercial and residential development, [River Lights], along River Road. Mike noted that the City of Wilmington has an agreement with the developer, Newland Communities, to begin construction of this community in 2012. The head of this development is Doug South, and Mike agreed to forward Mr. South’s contact information to PEC for their use. Baxter also noted that a gas company will be performing a directional bore just south of the area for a proposed marina.

Key issues with regard to the new transmission lines were discussed. The United States Department of Labor – Occupational Safety and Health Administration (OSHA) regulations state that minimum equipment clearances under 230kV lines must be at least 16 feet due to the potential arc from conductivity between the line charge (the existing lines are not insulated) and a ship’s equipment, which has caused some confusion with regard to the actual clearance of the existing lines. LT Vargo explained that there was concern from USCG that the 16 feet of conductivity clearance actually made the vertical clearance at the navigable channel only 149 feet, as the original permit executed by USACE in 1972 shows a vertical clearance of 165 feet at mean high water elevation (165 feet minus the 16 feet of conductivity clearance equals 149 feet). Tom explained that this was the driving force for the June 25, 2009 USACE letter to PEC, since 149 feet may impede vessel traffic and future vessel needs at the Port of Wilmington must be identified. The Port of Wilmington’s ability to attract vessels with air drafts exceeding 149 feet would be limited due to restrictions from the transmission lines, as they are just downstream from the Port. Baxter explained that the maximum sag correlates to a vertical clearance of 165 feet at the mean high water elevation in the center of the span, but that the navigational channel is not in the center of the span. There is actually a greater clearance from the mean high water elevation at the navigational channel, with a minimum clearance to the lines of approximately 185 feet (at maximum sag). Therefore the vertical clearance at the center of the navigational channel during maximum loading on the lines is approximately 169 feet



(185 feet minus the 16 feet of OSHA-required equipment clearance).

Stephanie noted that the power lines are currently the controlling vertical clearance limit to navigation to the Port, but that any plans for larger vessels in the future would utilize the North Carolina International Port (NCIP) in Southport, NC (Phase 1 is scheduled for operation in 2020 – a delay from the original date of 2017). NCSPA does not anticipate needing any additional vertical clearance before the NCIP becomes operational. Jared noted that the merchant ship industry builds vessels based on current restrictions in place now, and doesn't anticipate vessels having vertical clearance issues at any of the southern US ports. He explained that there are two Yang Ming vessels that call the Port of Wilmington on a regular basis, and they have air drafts of approximately 155 feet. This includes antennae which can be lowered to gain approximately 2.5 meters (~8 feet) of clearance if necessary. He stated that the container ship market does not see a problem with existing navigation clearance along the Cape Fear River, and NCSPA reiterated this position.

It was agreed at this meeting that there needs to be clarification sent to the agencies and shipping industry stakeholders on the actual existing vertical clearance (169 feet), with an explanation of the location of the navigable channel in relation to the maximum sag of the lines. Bob stated that it would be helpful to confirm the required clearance for the new line by the end of the year, so that PEC can proceed with developing alternatives for the new line crossing the river. Tracy gave a brief overview of the Cape Fear Skyway project, and stated that this timeframe would also be helpful in designing/planning for the Cape Fear Skyway, as NCTA and URS are currently working on a similar schedule as PEC for identifying alternative routes and will begin preliminary design on alternatives at the beginning of 2010.

PEC will prepare a draft letter stating that the existing 169 feet of vertical clearance at the existing transmission lines (and drawings) will be provided for the new transmission line and will send to NCSPA, USACE, USCG, Yang Ming, and Cape Fear River Pilots Association for review. After receiving comments, the draft letter will be finalized and PEC will request acknowledgement of this vertical clearance by the letter recipients by the end of this year. NCTA will be included on this correspondence.



CAPE FEAR SKYWAY

Transportation Improvement Program, Project No. U-4738



SIGN-IN SHEET

NAME	REPRESENTING	TELEPHONE	E-MAIL
DAVID GREEN	URS Corp	919-461-1446	david-green@urscorp.com
Tracy Roberts	NC Turnpike Authority	919-748-7147	tracy.roberts@turnpike.org
Joanna Harrington	URS Corp	919-461-1434	joanna-harrington@urscorp.com
Stephanie Ayers	NCSPA	910-233-4190	stephanie-ayers@ncports.com
MARK BLAKE	NCSPA	910-251-5674	mark-blake@ncports.com
Steve Wilson	Progress Energy	919-546-6933	steve.wilson@progress.com
COOPER DWIGGINS	PE	919 546 6970	COOPER.DWIGGINS@PE.NCMAIL.COM
Buzz Bryson	PEC	919 546-6637	buzz.bryson@pgnweil.com
AXTEL MATHESON	PEC	919-546-6707	axtel.matheson@PENMAIL.COM
Chris Vacker	US EAST GROUPS	910-772-2231	chris.vacker@us-east.com
Bob Wojnarski	PEC	919-546-6097	bob.wojnarski@pgnmail.com
Mike Korolusky	Wilmington MPD	910-470-0403	
Tom Doherty	USACE	910-251-4631	
TRACY HARRINGTON	URS Corp		
WILLIAM HEU	WILMINGTON CAPE FEAR PILOTS ASSN	910 229-9212	Williamheu@holma.com
CAMERON WEAVER	NC DENR	910-791-7427	Cameron.Weaver@NCDENR.GOV
Patrick Riddle	NC DOT - Division Office	910-251-5124	priddle@ncdot.gov
CHAD KIMES	NC DOT - Division Office	" " "	CKIMES@NC DOT.GOV

August 27, 2009 - 1:00 P.M. - PROGRESS ENERGY / USACE / USCG / NCSPA COORDINATION MEETING

Progress Energy New Cape Fear River Crossing Project Overview - Agenda

August 27, 2009

- I. Introduction and Meeting Objectives –Buzz Bryson/Steve Wilson
- II. Project Overview/Background – Steve Wilson
 - a. Project Need –FERC/System Reliability
 - b. Project Scope
 - c. High Level Schedule
 - d. Key Issues - ALL
 - i. Recent Letter From US Army Corp of Engineers
 - ii. Other Issues (proposed Cape Fear Skyway, Planned Developments, ???)
 - iii. Permitting concerns?
- III. Future Meetings/Next Steps/Action items - ALL

Handouts:

- 1. High level Project Schedule (to be provided at the meeting)
- 2. Copies of US Army Corp Of Engineers Letter (attached)
- 3. Aerial Drawings of Project Scope (to be provided at the meeting)



DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
69 DARLINGTON AVENUE
WILMINGTON, NORTH CAROLINA 28403-1343

REPLY TO
ATTENTION OF:

June 25, 2009

Action ID: SAW-15-72

Ms. Caren Anders
Vice President of Transmission, Operations and Planning
Progress Energy Corporation
100 East Davie Street
Raleigh, North Carolina 27601

Dear Ms. Anders:

On 18 February 1972, we issued a permit to Carolina Power and Light Company, now Progress Energy Corporation (PEC), to construct a 230-KV aerial powerline crossing of the Cape Fear River 3.8 miles south of Wilmington, Brunswick and New Hanover Counties, North Carolina. Plans and drawings attached to the permit required a mid-span sag (minimum) that corresponds to 165 feet of vertical clearance at the mean high water elevation. Adequate vertical clearance of these two transmission lines is crucial to continued safe navigation of the federal navigation channel crossing under this line, connecting the Atlantic Ocean to the Port of Wilmington.

The subject permit included the following conditions relating to suspension, modification, or revocation of the permit due to public interest concerns:

“(g) That this permit may at any time be modified by authority of the Secretary of the Army if it is determined that under existing circumstances, modification is in the public interest. * The permittee, upon receipt of a notice of modification, shall comply therewith as directed by the Secretary of the Army or his authorized representative.”

“(h) That this permit may be revoked by authority of the Secretary of the Army if the permittee fails to comply with any of its provisions or if the Secretary determines that, under the existing circumstances, such action is required in the public interest.*”


“* A judgment of whether or not suspension, modification or revocation is in the public interest involves a consideration of the impact that any such action or the absence of any such action may have on factors affecting the public interest. Such factors include, but are not limited to, navigation, fish and wildlife, water quality, economics, conservation, aesthetics, recreation, water supply, flood damage prevention, ecosystems and, in general, the needs and welfare of the people.”

To our knowledge, commercial shipping traffic utilizing the Cape Fear River federal navigation channel has been crossing under the existing, permitted powerlines without incident. However, the United States Coast Guard (USCG) recently advised my staff, based upon their coordination with NC State Ports officials, that container vessels presently under construction and scheduled to begin utilizing the State Port facilities at Wilmington may not be able to safely navigate under this existing line due to insufficient vertical clearance. Please be aware that any obstruction to navigation created by the existing powerlines will require appropriate action on my part, resulting in possible suspension, modification, or revocation of your permit and a requirement for corrective action as discussed in the above-stated conditions of your permit.

In an effort to take a proactive approach to this impending issue, I strongly recommend PEC immediately begin coordination with the USCG, the NC Ports Authority and the USACE to determine what, if any modification to the existing power lines (i.e, raising or burying) may be necessary to safely accommodate reasonably foreseeable navigation needs. Mr. Tom Walker of my staff is available to assist you in this effort, coordinating with the USCG and NC State Ports as appropriate.

If you have any questions regarding this matter, please contact Mr. Tom Walker, Wilmington Field Office Chief, at telephone (910) 251-4631, or me at telephone (910) 251-4501.

Sincerely,


Jefferson M. Ryscavage
Colonel, U. S. Army
District Commander

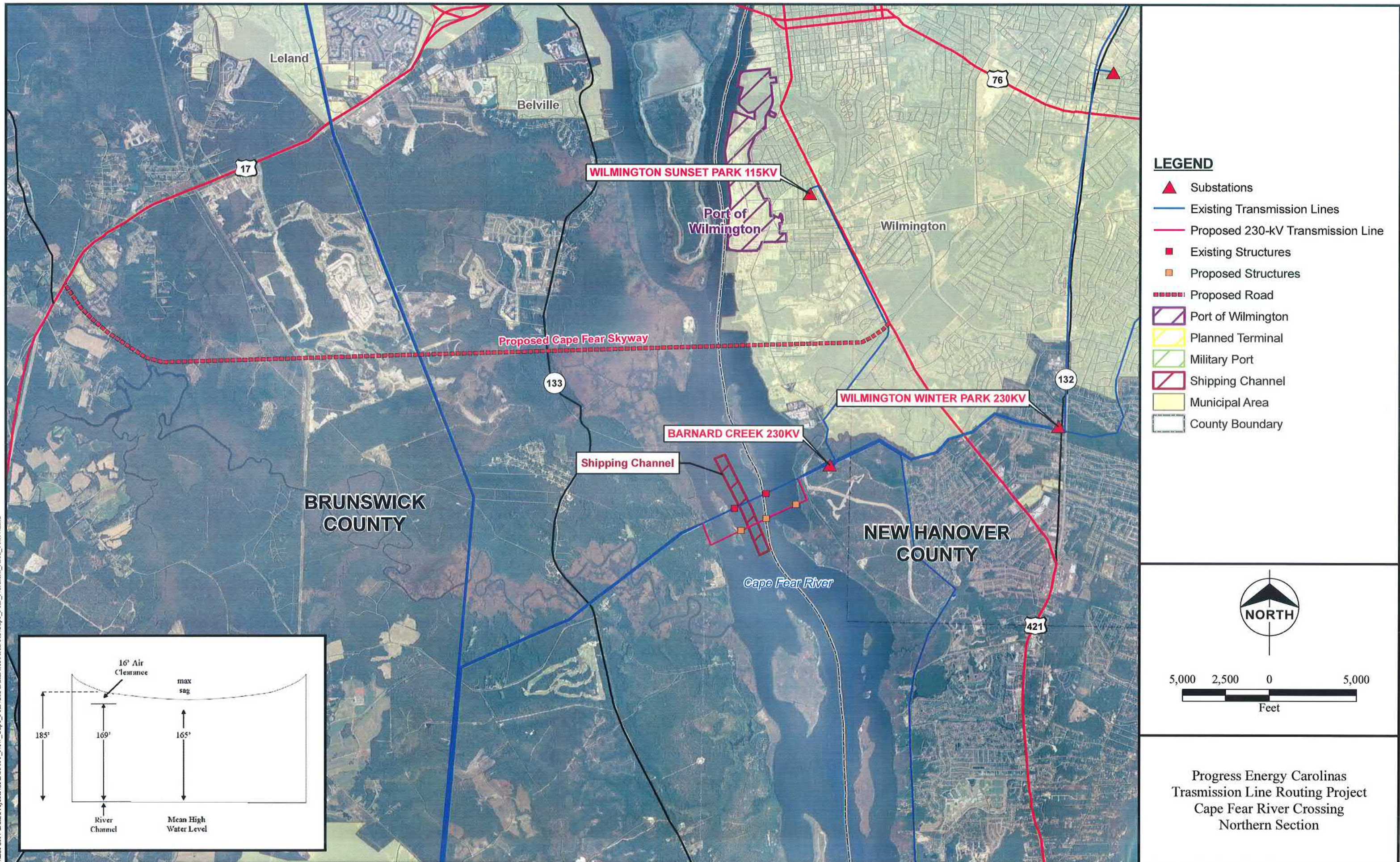
Copies furnished:

LT Chris Vargo
U.S. Coast Guard
Chief, Operations Department
Marine Safety Unit Wilmington
721 Medical Center Drive, Suite 100
Wilmington, NC 28401

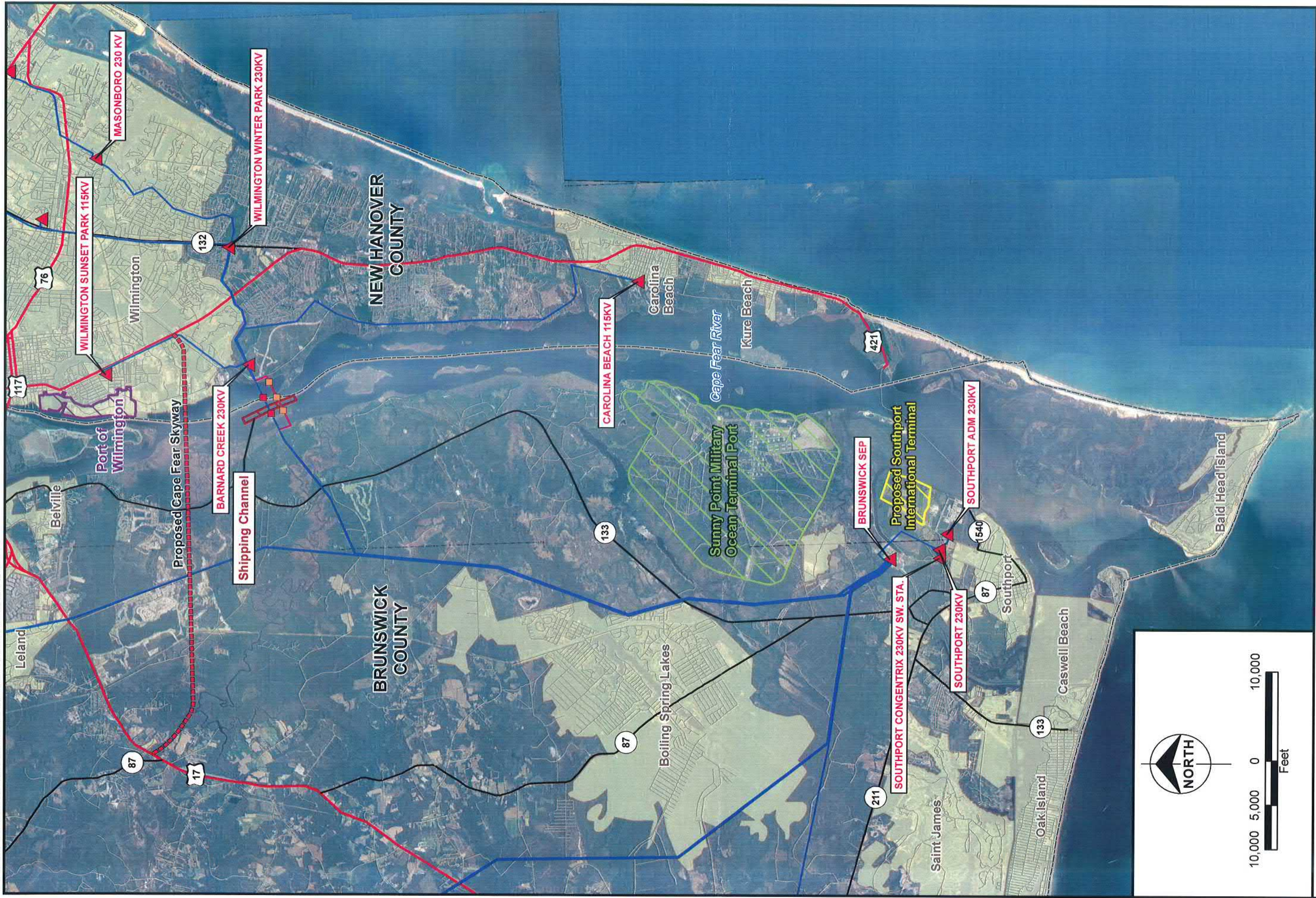
Ms. Laura M. Godwin
Director of Government Relations
North Carolina State Ports Authority
2202 Burnett Blvd.
Wilmington, NC 28401

Mr. Doug Huggett
Division of Coastal Management
North Carolina Department of Environment
and Natural Resources
400 Commerce Avenue
Morehead City, North Carolina 28557

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LEGEND

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|-------------------------------------|-----------------------|--------------------|
| ▲ Substations | ■ Proposed Structures | ▨ Military Port |
| — Existing Transmission Lines | — Proposed Road | ▨ Shipping Channel |
| — Proposed 230-kV Transmission Line | ▨ Port of Wilmington | ▨ Municipal Area |
| ■ Existing Structures | ▨ Planned Terminal | ▨ County Boundary |

Progress Energy Carolinas
Transmission Line Routing Project
Cape Fear River Crossing
Overview Map



6,000 3,000 0 6,000
Feet

LEGEND

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|--|-----------------------------------|--|--------------------|
| | Substations | | Military Port |
| | Existing Transmission Lines | | Shipping Channel |
| | Proposed 230-kV Transmission Line | | Municipal Area |
| | Existing Structures | | County Boundary |
| | | | Port of Wilmington |
| | | | Planned Terminal |

Progress Energy Carolinas
Transmission Line Routing Project
Cape Fear River Crossing
Southern Area



MEMORANDUM

To: Attendees

From: Joanna Harrington, URS

Date: October 13, 2009

Subject: Minutes of Meeting held September 14, 2009 at 1:00 PM
North Carolina Turnpike Authority – Cape Fear Skyway Project
STIP U-4738

Attendees:

Rob Ayers	Federal Highway Administration (FHWA)
George Hoops, PE	FHWA
Shane York, PE	North Carolina Department of Transportation (NCDOT)
Mike Kozlosky*	Wilmington Urban Area Metropolitan Planning Organization (WMPO)
Jennifer Harris, PE	North Carolina Turnpike Authority (NCTA)
Tracy Roberts, AICP	HNTB / NCTA General Engineering Consultant
David Griffin, CEP	URS
Peter Trencansky, PE	URS
Joanna Harrington	URS

**joined by telephone*

A meeting was held at the offices of the Federal Highway Administration (FHWA) to continue discussions on the purpose and need for the Cape Fear Skyway project.

A discussion ensued regarding the starting and ending points for the project. David explained that up until this point, the presumed western terminus of the project was at the future I-140 and US 17 interchange, but alternative(s) could be developed that begin the project on future I-140 (R-2633A) some distance north of the future US 17 interchange and cross US 17 north and east of the originally assumed terminus. The purpose of this alternative alignment would be to explore opportunities to avoid or minimize impacts to Brunswick Forest and other neighborhoods, such as Snee Farm, Stoney Creek and Planters Walk.

A discussion was held about how the need could be described for the project. Jennifer stated that overall, the needs are traffic capacity deficiencies, improved access to the Port of Wilmington, and inconsistencies with local and regional plans. Tracy noted that access to the Port will be difficult to substantiate as a project need since there is little existing data demonstrating such a need. Rob questioned if the location of the Port determined the location for the project, and asked if the project could be located further south of the alternatives that are currently shown in the *Alternatives Screening Report*. Mike noted that there are issues with planned and ongoing developments further



Minutes of September 14, 2009 NCTA Meeting

October 13, 2009

Page 2

south. There are also North Carolina Coastal Land Trust properties and extensive wetland systems further south. Peter also noted that the location of the project becomes less viable due to the likely reduction in traffic volumes the further the Cape Fear Skyway is located from downtown Wilmington. Jennifer also noted that a location further south would likely result in greater travel times and travel distances and could have higher project costs. Rob stated that there may need to be some language in the purpose and need that explains why a more southern alternative would not make sense.

Discussion continued regarding the overall project need. It was agreed that there should be some discussion of why a southern alternative would not be feasible. Discussion regarding logical termini also ensued. George added that Chapter 2 of the Draft Environmental Impact Statement (DEIS) about "Alternatives" would explain more specifics about reasonable alternatives (including why a southern alternative may or may not be feasible) and logical termini and therefore would not need to be addressed in the purpose and need. Tracy added that all of the Detailed Study Alternatives (DSAs) would need to have logical termini, and that this could be discussed in the *Alternatives Screening Report*.

Discussion turned to performance measures of Level of Service (LOS), travel speed, and uninterrupted travel. Rob stated that it may not be beneficial to have both LOS and speed as performance measures, as high speed may be difficult to define. It was agreed that the Wilmington Urban Area Metropolitan Planning Organization's (WMPO) updated Long Range Transportation Plan (LRTP) should define their goal for freeway facilities as LOS D or better, and arterials as LOS E or better. This would provide an LOS goal for a roadway classification in addition to freeways. If LOS D is defined as a performance measure, the DEIS for the Cape Fear Skyway project would be consistent with the LRTP at the time the DEIS is released (or the "current LRTP"). A discussion was held about whether or not the project's purpose and need should be approved contingent upon the LRTP update. It was agreed that due to scheduling constraints, the project studies should continue to move forward. If the WMPO decides not to use LOS D or better (and stays with LOS E or better, as it is used in their current LRTP), then the purpose and need for the project could be revised if necessary. The term "uninterrupted travel" was discussed. The reason this was included in the current version of the purpose statement was to take the deficiencies associated with the current movable span structure crossing of the Cape Fear River into account, as included in the *Brunswick County Transportation Plan* (NCDOT, December 2001). It was decided that this language would be removed from the revised purpose statement; even with the upgrade existing alternative, a new bridge across the Cape Fear River would be needed, and a movable span would not be supported by the WMPO.

Based on these discussions about the purpose and need of the project, it was agreed that the revised purpose statement should read:

"Provide a facility beginning in the vicinity of US 17 and future I-140 in Brunswick County across the Cape Fear River to US 421 near the Port of Wilmington in southern New Hanover County, that operates at a level of service



in the 2035 design year of the project consistent with the Wilmington Urban Area Metropolitan Planning Organization's Long Range Transportation Plan and in a manner consistent with the North Carolina Strategic Highway Corridor Initiative and the North Carolina Intrastate System."

URS will revise the purpose statement, as well as revise WMPO assumptions for agreement between the North Carolina Turnpike Authority (NCTA), the North Carolina Department of Transportation (NCDOT), WMPO, and FHWA. The WMPO assumptions – to be included in the updated LRTP - include establishing a LOS criteria for freeway and arterial facilities, the classification of US 17 as an arterial from the future I-140/US17/CFS interchange to the US 17/74/76 interchange, and inclusion of a project from the terminus of the Cape Fear Skyway to the Independence Boulevard Extension (to complete the Wilmington Urban Loop). It was also discussed that the next draft (Draft #6) of the Purpose and Need Statement should include more discussion about the demand for the Cape Fear Skyway and the origin and destination of trips, such as discussions on the locations of population growth changes and what development has occurred (and where) in the study area.

It was discussed that additional traffic forecasts may be needed to accommodate some alignments that will be developed in the alternatives development and screening process. URS will develop an approach that outlines any additional traffic forecasting needs and the associated timeline for when that information would be needed. The approach will also outline recommendations regarding how the forecasts might be developed and how approvals could be obtained from NCDOT and/or NCTA. Peter noted that if and when an Interchange Modification or Justification Report (IMR or IJR) is required, a true 20-year traffic forecast may be required.

The next steps for the project were discussed. URS will update the Draft Purpose and Need Statement and deliver it to the North Carolina Turnpike Authority (NCTA) and FHWA for review. The *Alternatives Screening Report* will be reassessed, and a determination on the need for additional traffic forecasts will be made. It was also discussed that Steve DeWitt will need an alternatives map that considers Brunswick Forest development for the 10/14/09 meeting in Wilmington with the Wilmington Chamber of Commerce and a special committee of the WMPO Technical Advisory Committee.. URS will obtain more information on parcel development within Brunswick Forest to expedite this request.

Action Items

- URS to revise purpose statement and WMPO assumptions and forward to team for review and approval. *Update: URS sent revised purpose statement to meeting attendees on 9/17/09.*
- URS to update Draft Purpose and Need Statement (Draft #6) for NCTA and FHWA review. *Update: URS submitted Draft #6 to NCTA on 10/02/09.*
- Regarding the need for additional traffic forecasts, URS will develop an approach that outlines what is needed and the associated timeline and coordinate this with NCTA. *Update: URS sent a memorandum regarding traffic forecast needs to NCTA on 9/17/09.*



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October 13, 2009

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- URS to get information on developed parcels within the Brunswick Forest development in order to develop additional alternative alignments in the vicinity of the development. *Update: URS visited Brunswick Forest on 9/24/09 to determine areas that have been developed; ideas on possible new alternatives within the development will be discussed with NCTA on 9/29/09.*
- URS to provide NCTA an updated alternatives map for the 10/14/09 meeting with the Wilmington Chamber of Commerce and a special committee of the WMPO Technical Advisory Committee. *Update: Brunswick County GIS parcel data was provided by the County on 9/22/09. URS will provide NCTA an updated alternatives map by 10/02/09.*



MEMORANDUM

To: Attendees

From: Joanna Harrington

Date: November 30, 2009

Subject: Minutes of Meeting held November 2, 2009 at 11:00 AM
North Carolina Turnpike Authority – Cape Fear Skyway Project
STIP U-4738

Attendees:

Steve DeWitt, P.E.	North Carolina Turnpike Authority (NCTA)
Jennifer Harris, P.E.	NCTA
Mike Kozlosky*	Wilmington Urban Area Metropolitan Planning Organization
Tracy Roberts, AICP	HNTB
David Griffin, CEP	URS Corporation – North Carolina
Peter Trencansky, P.E.	URS Corporation – North Carolina
Joanna Harrington	URS Corporation – North Carolina

**Joined by telephone*

A meeting was held at the North Carolina Turnpike Authority (NCTA) to discuss corridor preservation for the Cape Fear Skyway project. Mike Kozlosky began the meeting by stating that the purpose of the 10/14/09 “special” meeting held by the Wilmington Urban Area Metropolitan Planning Organization’s (WMPO) Transportation Advisory Committee (TAC) was to determine how the project would proceed in light of the substantial land development that has occurred in the Cape Fear Skyway study area. The TAC met again on 10/28/09 and adopted a resolution indicating support for the project and for a corridor to be preserved. The TAC agreed that the preserved corridor should generally follow the new northern alignment presented by NCTA at the 10/14/09 meeting. The TAC set a six month timeline (4/28/10) for Brunswick County to file a corridor protection map.

Mike stated that the Town of Leland will develop a resolution at their November meeting that states the Town supports the Cape Fear Skyway and supports the preservation of a corridor. Jennifer stated that a functional alignment will need to be developed that can be studied during the National Environmental Policy Act (NEPA) process (along with other reasonable alternatives) and that early corridor development of this alternative is being done at the request of Brunswick County, the Town of Leland and the WMPO. URS will develop this functional design so that a reasonable assessment of the design footprint can be established. It was agreed that it would be useful for URS to submit a timeline to NCTA that shows how a corridor protection map could be completed by March of 2010 (deadline for Brunswick County to adopt a corridor protection map is April 2010).

A discussion ensued regarding the type of interchange designs needed at I-140 and US 17 for the new northern alignment. Peter recommended partial interchanges be used to reduce the amount of redundancy



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from traffic moves from travelers using the Wilmington Bypass and the Cape Fear Skyway. He also stated that this would reduce the footprint. Mike noted that the greatest amount of land needs to be preserved that could possibly be needed for the project interchanges and the corridor as a whole.

A discussion was held regarding traffic forecasts that would be needed for the new northern alignment, as it would tie into the Wilmington Bypass instead of at US 17, as was assumed in the *Final Traffic Forecast for TIP Project U-4738 Cape Fear Skyway* (Wilbur Smith Associates, June 2008). It was decided that additional traffic forecasts should be prepared for the northern alignment using the previously completed forecast, and that URS could send a memo detailing this work to NCTA for review and then to Wilbur Smith Associates (WSA) for their review.

Mike began a discussion regarding the 224-unit Madison Place Apartments near the intersection of US 421 (Carolina Beach Road) and Independence Boulevard. He asked if NCTA could prepare a cost-benefit analysis of purchasing the site, assuming it was fully built out, as compared to purchasing the site being vacant but zoned and approved for multi-family development. Steve agreed that NCTA could do this. Mike stated that the WMPO is at a critical point with this property and it could put the Cape Fear Skyway project in jeopardy. The WMPO needs to determine the benefit versus cost of purchasing the property now in light of potential corridor preservation as opposed to waiting until a later date when right of way is actually needed, specific right-of-way limits have been determined, and development may have already occurred. Mike will send NCTA an appraisal of the property (valued at \$1.5 million vacant), and URS will inquire with their right of way consultant, O.R. Colan, to see if they can perform a cost-benefit analysis.

David asked Mike about the proposed development to the east of Brunswick Forest, called the Baites Tract. Mike stated that a residential development plan for the property has been submitted to Brunswick County. He will send the plan to NCTA for use in developing a corridor. David also asked about a few of the comments from George Hoops on Draft #6 of the Purpose and Need Statement. Mike will send NCTA the Origin-Destination (*Cape Fear Regional Travel Surveys*, NuStats, November 2003) study for use in determining traffic movements across the Cape Fear River.

Action Items

- URS to develop a functional alignment for the new northern alternative; a timeline for preparation of this design will also be submitted to NCTA. *Update: URS submitted a draft timeline to NCTA 11/10/09.*
- URS to submit a memo to NCTA detailing the redistribution of traffic volumes for the northern alignment. URS will provide a list of the additional traffic forecast needs to complete the DEIS and designs at a later date. *Update: URS submitted a draft memo detailing traffic redistribution on 11/09/09; URS is currently revising based on NCTA comments. A memo detailing additional traffic forecast needs to complete the DEIS is currently being prepared by URS.*
- Mike Kozlosky to submit Jeff Earp's suggested northern alignment to NCTA. *Update: Mike Kozlosky sent the alignment to NCTA on 11/02/09.*
- Mike Kozlosky to send appraisal of Madison Place Apartments property to NCTA. *Update: Mike Kozlosky sent appraisal to NCTA on 11/02/09.*
- URS to contact O.R. Colan regarding a cost-benefit analysis of the Madison Place Apartments property. *Update: O.R. Colan will complete a cost-benefit analysis; URS is currently drafting a scope of work for these services.*



Minutes of November 2, 2009 NCTA Meeting

November 30, 2009

Page 3

- Mike Kozlosky to send development plan for the Baites Tract to NCTA. *Update: Mike Kozlosky sent development plan (known as Mallory Creek Tract) to NCTA on 11/02/09.*
- Mike Kozlosky to send Origin-Destination study (*Cape Fear Regional Travel Surveys*, NuStats, Nov. 2003) to NCTA. *Update: Mike Kozlosky sent study to NCTA on 11/02/09.*



Turnpike Environmental Agency Coordination (TEAC) Meeting

MEETING MINUTES (Draft)

Date: February 16, 2010
10:30 A.M. To 12:30 P.M.
NCTA Board Room

Project: STIP U-4738 – Cape Fear Skyway

Attendees:

George Hoops, FHWA
Chris Militscher, USEPA
Mickey Sugg, USACE
Brad Shaver, USACE
David Wainwright, NCDENR-DWQ
*Ron Sechler, NMF
Gary Jordan, USFWS
Travis Wilson, NCWRC
Steve Sollod, NCDOT
Mike Kozlosky, WMPO
Steve Gurganus, NCDOT
Amy Simes, NCDENR
Brian Wrenn, NCDENR - DWQ

*Benjetta Johnson, NCDOT
Nilesh Surti, NCDOT
Dewayne Sykes, NCDOT
Missy Pair, NCDOT
Jennifer Harris, NCTA
Tracy Roberts, HNTB
Kevin Markham, ESI
Steve Browde, Lochner
Wendee Smith, Mulkey
David Griffin, URS
Kim Leight, URS

**Joined meeting via telephone*

Presentation Materials (Posted on TEAC website):

- Agenda
- Project PowerPoint Presentation
- Draft Purpose and Need Statement
- Draft Project Study Area Map (included in Draft Purpose and Need Statement)
- Draft Section 6002 Project Coordination Plan

Purpose:

The purpose for the day's TEAC meeting was to present a brief project history, an overview of the Draft Section 6002 Coordination Plan, the project study area, Draft Purpose and Need Statement, the alternatives screening methodology, preliminary alternative concepts, and to solicit comments and/or Issues of Concern from TEAC members in this regard.

General Discussion:

The following information was discussed at the meeting.

- Jennifer Harris began the meeting by initiating introductions among meeting attendees and presenting the agenda. The agenda items were as follows: Project Overview, Project History and

Status, Section 6002 Coordination Plan, Project Study Area, Purpose and Need Overview, Alternatives Screening Methodology, Alternative Concepts, and Wrap Up/Next Steps. Jennifer Harris then asked Mike Kozlosky if he wanted to make any opening remarks. Mike Kozlosky said that the project was a very important and valuable project to the area and local governments and that there is tremendous interest in moving forward with it. He added that the importance of the project was underscored by the Wilmington Urban Area Metropolitan Planning Organization (WMPO) having passed a resolution to adopt a corridor protection map for a proposed northern alternative. Jennifer Harris then turned the meeting over to David Griffin.

- **Project Presentation:** David Griffin gave a presentation to introduce the project and provide background information. Printed copies of the PowerPoint slides were provided to meeting attendees. Highlights of the presentation are as follows:
 - A project overview outlining some of the activities that had taken place since the agencies last met on the project on January 13, 2006 was provided. He provided a few milestone dates including the Cape Fear Skyway being identified as a candidate toll road in 2005; an agency scoping meeting was held on January 13, 2006; public meetings were held April 10 and 11, 2006; the Notice of Intent was published May 11, 2006 and preliminary financial analyses were conducted in 2007.
 - The Draft Purpose and Need Statement had undergone a number of reviews and revisions.
 - Numerous stakeholder meetings had taken place including coordination with Progress Energy, Snee Farm, Brunswick Forest, Wilmington Chamber of Commerce, NC Coastal Land Trust, towns, counties, and others.
 - According to the Wilmington Urban Area 2030 Long Range Transportation Plan (LRTP) the project is planned as a multi-lane facility with a high-level bridge spanning the Cape Fear River. It is planned to serve multiple users including the Port of Wilmington, military, commuters and tourists.
 - The Federal Highway Administration's (FHWA) determination is that an Environmental Impact Statement would need to be prepared to address the National Environmental Policy Act (NEPA).
 - The Draft Section 6002 Coordination Plan was reviewed, and sections pertaining to the project schedule (noting that it will be re-evaluated), agency roles and contacts, purpose and need, alternatives screening, and permitting were highlighted.
 - The project study area was reviewed and how it evolved. The initial study area was developed based on a terminus at proposed I-140 and US 17 heading eastward on new location to US 421 in New Hanover County. The study area was then expanded to include an upgrade alternative(s) along existing US 17. The study area was expanded again to include a western terminus along proposed I-140 north of US 17.
 - The needs of the Cape Fear Skyway include: traffic capacity deficiencies, inconsistency with the regional transportation corridor vision, and North Carolina Port access. He reviewed the project purpose included in the Draft Purpose and Need Statement.
 - The alternatives screening process and range of preliminary alternatives to be considered include the no-build alternative, mass transit, multi-modal options, transportation systems management, travel demand management, improving existing roadways, new location options, and hybrids or combinations of new location and improve existing roadway alternatives.

- The alternatives screening methodology was also discussed. He noted that all alternatives that meet the Purpose and Need will be included. Alternatives recommended by the agencies warranting further study will also be included in the alternatives screening process.
- David Griffin explained that the initial GIS screening is based on certain criteria to help eliminate certain segments and subsequent corridors from further consideration during the alternatives screening methodology. He also noted that the methodology used for the Cape Fear Skyway would be similar to that used for the Monroe Bypass/Connector planning process.
- Preliminary build alternative concepts were reviewed including numerous new location alternatives, improving existing US 17, and the most recent northern alignment alternative identified for corridor protection by local governments.
- The presentation concluded with a review of the next steps in the environmental review process.
- **General Comments and Questions & Answers:**
 - Chris Militscher inquired whether planning to date had taken into consideration the proposed International Port at Southport and the ensuing changes this would precipitate for local roadways. David Griffin stated that studies for the Cape Fear Skyway will consider the operations of other roadways particularly as they relate to the proposed International Port. Mike Kozlosky replied that the Port study is still underway and we can't plan for something for which we have no details. David Griffin indicated that the Port projects that it will operate at the same level of service or higher even if the International Port is built. Mike Kozlosky emphasized that it was his understanding as well that the Wilmington Port would operate at the same level as it does today, even with the new Port. Chris Militscher stated that the Wilmington Port is not operating at full capacity. He inquired whether the existing Port of Wilmington will accommodate "super container" ships? He added that the International Port would likely kill the current Wilmington Port due to phasing out of smaller boats. David Griffin replied there are separate uses and both Ports are predicted to have steady increases. He said that the International Port would likely serve container ships while the Wilmington Port would serve bulk and break-bulk cargo. Chris Militscher would like this considered in the study and will forward Port data to David Griffin for review. David Griffin added that the North Carolina Department of Transportation (NCDOT) Program Development Branch was currently conducting a feasibility study to evaluate the existing road network in the vicinity of the proposed International Port (i.e., NC 133, NC 87, and NC 211) to identify improvements needed for the International Port.
 - The agencies members discussed the Alternatives Screening Methodology. Chris Militscher inquired whether mass transit would be one of the alternatives, and David replied that the Mass Transit Alternative would be analyzed but would likely be screened out early because it will not meet the Purpose and Need of the project. Chris Militscher said an option should be to look at the CATS model, a process completed in South Carolina for the I-73 project. Travis Wilson replied that the study was very detailed and we probably can't accomplish that level of detail with this project. Chris Militscher added the process was not perfect but was effective. Chris Militscher is concerned about specific screening criteria and potential use of a weighting system. The agencies agreed they would like more details on the methodology. The alternative screening methodology will be reviewed at future TEAC meetings as the study process evolves. Jennifer Harris asked how the alternatives screening process ensured that human environment concerns

were receiving equal treatment. Information about environmental justice communities and executive orders assist with protecting the human environment but only laws can be enforced such as legislation associated with the National Environmental Policy Act (NEPA) and Waters of the US.

- Travis Wilson asked what the final goal for the GIS screening was. David discussed alternative concepts and said there were many variations of alternatives. He also said that both quantitative and qualitative approaches will be used screen out alternatives.
- The agencies agreed they would like more details on the alternative screening methodology. Jennifer noted that all agencies and local governments (municipalities and MPO) will be involved in the selection and implementation of methodology for the screening.
- George Hoops stated that the Section 6002 Coordination Plan is being implemented to allow each agency the opportunity to comment on what project alternatives are to be considered during the alternatives development process. Travis Wilson added that there should be cooperation across the board to end up with a “best fit” alternative. Chris Militscher said a longer process gave resource agencies more time to raise any red flags that may prevent a permit being issued. George Hoops said that red flags should be known before the permitting process.
- Steve Sollod inquired whether invitation letters had been mailed to Participating and Cooperating Agencies. Tracy Roberts replied that they had not, but they will be distributed soon.
- Jennifer Harris began a discussion regarding corridor protection and study area development. The agencies then engaged in discussion regarding a recently passed resolution by the City of Wilmington depicting an alignment for the proposed project developed for corridor map adoption. Jennifer Harris explained that the local resolution is separate from NCTA’s study or the future results of the alternatives and environmental analyses. The resolution is merely a result of the WMPO and Brunswick County doing their job to prevent development within a reasonable new location corridor. Mike Kozlosky stated that the area is rapidly developing and if a corridor is not preserved, displacements will be of the magnitude such that the project as envisioned in local plans might not be built. Chris Militscher stated he was concerned the locals are not putting enough importance on natural resources. Jennifer Harris noted that other alternatives will be looked at, including upgrading existing US 17.
- Steve Sollod asked about potential corridors further south of the draft study area. David Griffin said alternatives further south could result in impacts to the Town Creek system where there are several listed protected species, high quality wetland habitat, and NC Coastal Land Trust properties.
- Steve Sollod inquired if the Cape Fear Skyway will take traffic away from the Cape Fear Memorial Bridge which has a sufficiency rating of about 35. Jennifer Harris replied that to the best of her knowledge the rating is 50 and the bridge is not susceptible to closure anytime soon. If the Cape Fear Skyway were to be constructed, it is expected that traffic otherwise using existing facilities, such as US 17/US 17 Business and US 74/76, would shift to the Cape Fear Skyway.
- Chris Militscher inquired about toll road aspects including costs and available funding. Steve Sollod also asked if funding for the project would be completely from toll revenues. Jennifer Harris replied that this was not the case for other NCTA projects and is not for the Cape Fear Skyway either. She added that several funding sources will be needed in

addition to toll revenues. Steve Sollod asked whether the \$1.1 billion cost is accurate – Jennifer Harris said it is hard to say as value engineering will occur at the appropriate times in the project. Jennifer Harris said we need transportation solutions that make sense – no alternative is off the table yet.

- Mickey Sugg said the purpose and need are key to the project. He inquired whether traffic modeling was going to be based on current traffic counts and stated that the traffic studies should focus on the bottleneck points. Jennifer Harris explained that traffic models are calibrated to actual traffic counts and forecasts are developed accordingly.
- Discussion ensued regarding use of the existing US 17 alignment for improvements. Chris Militscher said that there was an 18-acre site on the east side of the Cape Fear River near the Cape Fear Memorial Bridge that had recently undergone major (\$7 million) environmental cleanup. The site is adjacent to the Colonial tank farm and could possibly be used for part of the Cape Fear Skyway if needed. Mickey Sugg replied that he knew of no resources on the east side of the river that would provide environmental constraints. David reviewed the historic districts and low income/minority communities on the east side of the river that may result in issues of concern. Further studies would be needed.
- Chris Militscher inquired about the amount of residential and golf course development within Brunswick Forest. David Griffin identified those areas on the map – golf course development is limited to the southern portion of Brunswick Forest. Steve Sollod said that a precedent had been set for splitting neighborhoods with major roadway projects (example being I-540 in Wake County). Chris Militscher said that future neighborhoods are not tangible concerns. Mike Kozlosky stated that in the past commitments were made to minimize / mitigate impacts to communities such as Snee Farm and Stoney Creek, as well as Brunswick Forest.
- Regarding the northern alternative for corridor preservation, Chris Militscher stated that there were lots of wetlands in the proposed US 17/Cape Fear Skyway interchange area. Jennifer Harris added that no alternatives were off the table for the project and that additional detailed studies would be undertaken to identify environmental resources.
- Steve Sollod asked whether wetlands would be assessed using the North Carolina Wetland Assessment Method (NCWAM). David Griffin said that acceptable methodology will be employed when technical studies are conducted for the alternatives chosen for detailed studies. Brad Shaver replied that NCWAM training is on-going now. David Wainwright added that aquatic resources will need some level of field verification for the GIS screening. Chris Militscher said the best source of data will be from NCWAM – one of the best wetland assessment methods in the country. Mickey Sugg added that it is also a rapid assessment method.
- Ron Sechler added that all alternatives may impact Essential Fish Habitat (EFH) and asked when this assessment would occur? Jennifer Harris replied that EFH will be addressed in the Draft Environmental Impact Statement after selection of Detailed Study Alternatives. Ron Sechler added that Fritz Rohde will be the National Marine Fisheries Service point of contact. NCTA will coordinate with the NC Division of Marine Fisheries to determine the primary point of contact.
- Brad Shaver suggested that Military Ocean Terminal Sunny Point (MOTSU) should be added to the list of stakeholders, primarily due to the potential crossing of their railroad. David Griffin responded saying that they have been in the coordination loop to date and that will continue.

- David Wainwright inquired about the current schedule for Wilmington Bypass. Mike Kozlosky responded that:
 - Section A is in Design-Build and the bid opening is today (February 16, 2010).
 - Section B will begin right of way acquisition within the next few years.
- Brad Shaver added this was a lot of information to process at one time and asked whether the project should follow the merger process? Jennifer replied that NCTA is using a coordination process similar to the merger process, but without required signatures for each of the major milestones.
- The schedule for the next TEAC meeting was discussed. Chris Militscher said that there was not enough time to make any comments on assessment methodology before a March meeting. David Griffin indicated that the most critical items include comments on the Draft Project Study Area, Draft Purpose and Need Statement, and the Draft Section 6002 Coordination Plan. Chris Militscher thought that he might have some initial thoughts on the Alternative Concept Methodology by the April 13, 2010 meeting.

Previous Action Items:

- None

New Action Items:

- Agencies will provide comments on the Draft Section 6002 Coordination Plan and the Draft Project Study Area by March 9, 2010.
- Agency Comments and Issues of Concern on the Draft Purpose and Need Statement, Draft Alternative Concepts, and Draft Alternative Screening Methodology will be discussed at the April 13, 2010 TEAC Meeting.
- Additional information regarding the Alternatives Screening Methodology will be provided by NCTA at the April 13, 2010 TEAC Meeting.

Resolutions:

- None

Next Steps:

- The next TEAC meeting for the Cape Fear Skyway will be April 13th, 2010.



MEMORANDUM

To: Attendees

From: Joanna Harrington

Date: April 1, 2010

Subject: Minutes of Meeting held March 29, 2010 at 10:00 AM
North Carolina Turnpike Authority – Cape Fear Skyway Project
STIP U-4738

Attendees:

Mayor Bill Saffo	City of Wilmington
Bill Sue	Brunswick County
Mike Kozlosky	Wilmington Urban Area Metropolitan Planning Organization
Doky Saffo	
Bill Cameron	Cameron Management
Jeff Earp	Brunswick Forest
Craig Stevens	Stevens Fine Homes
Jennifer Harris, P.E.	North Carolina Turnpike Authority (NCTA)
Jeff Dayton, P.E.	HNTB
Jeff Hext, P.E.	URS Corporation – North Carolina
Joanna Harrington	URS Corporation – North Carolina

A meeting was held at City Hall in Wilmington, NC to discuss the northern alignment in Brunswick County for corridor preservation of the Cape Fear Skyway project.

Mayor Saffo began the meeting explaining that there are concerns from property owners in Mallory Creek and Brunswick Forest regarding timelines for corridor protection. Mike Kozlosky stated that resolutions were sent to the municipalities last week for support of the northern alignment.

A discussion ensued regarding impacts to properties due to the northern alignment. Craig Stevens noted that he supports the Cape Fear Skyway project, but that the northern alignment goes through the Southbrook community, which is currently being developed. He is concerned that the three-year timeframe will cause a heavy financial burden to him, when the road may or may not be constructed. Bill Sue noted that previous alignments had gone through other developments, notably Snee Farm, Stoney Creek, and Brunswick Forest. Mike Kozlosky stated that the bottom line is that planning is crucial at this state, as development in the area is quickly closing the window of opportunity on the Cape Fear Skyway project. It was agreed that an option closer to Wire Road would be preferable from a marketing perspective.

A discussion was held regarding how gap funding could be received for the project. Mike Kozlosky stated that he will be meeting with the state legislature for allocation of gap funds in 2013. \$49 million in gap funds will be requested if the bypass is not tolled, and \$38 million will be requested if the bypass is tolled. Mayor



Minutes of March 29, 2010 NCTA Meeting

April 1, 2010

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Saffo indicated he felt it would be difficult to get gap funding, but inquired as to whether or not the funding could be used to pay for the first year of right of way if received. Jennifer Harris explained that the NCTA can only use gap funding to repay debts, not purchase right of way. Also, funds can only be received after the Record of Decision has been issued, which is scheduled for 2012.

With regard to the two options presented for the northern alignment (see attachment), it was agreed that Option #2 would be the most desired from attendees at today's meeting. URS will add this revision to the design for the northern alignment, minimizing wetlands where possible. Craig Stevens will send Jennifer Harris the wetland delineation file for this area, which has been approved by the United States Army Corps of Engineers.

Additional Items

- Bill Sue noted that the proposed North Carolina International Port in Southport indicates a need for the Cape Fear Skyway project.
- Jeff Earp inquired as to why the alignment could not be placed further south. Mike Kozlosky noted that there are several North Carolina Coastal Land Trust Properties south of the study area.
- Craig Stevens noted that there is significant drainage that will need to be accommodated in the vicinity of the Cape Fear Skyway near Wire Road.

Action Items

- Craig Stevens to provide NCTA will wetland delineation and parkway file for property near Wire Road.



Turnpike Environmental Agency Coordination (TEAC) Meeting

MEETING MINUTES (Draft)

Date: April 13, 2010
10:00 A.M. To 12:00 P.M.
NCTA Board Room

Project: STIP U-4738 – Cape Fear Skyway

Attendees:

George Hoops, FHWA
Scott McLendon, USACE
Brad Shaver, USACE
David Wainwright, NCDENR-DWQ
Fritz Rohde, NMFS
Gary Jordan, USFWS
Travis Wilson, NCWRC
Steve Sollod, NCDCM
*Mike Kozlosky, WMPO
Steve Gurganus, NCDOT
*Jessie O'Neal, NCDENR - DMF
*David Lane, NCDENR - DCM

Lonnie Brooks, NCDOT
Dewayne Sykes, NCDOT
Stephanie Ayers, NCSPA
Mark Blake, NCSPA
Jennifer Harris, NCTA
Tracy Roberts, HNTB
Jeff Dayton, HNTB
Kevin Markham, ESI
Steve Browde, Lochner
David Griffin, URS
Joanna Harrington, URS

**Joined meeting via telephone*

Presentation Materials (Posted on TEAC website):

- Agenda
- Project PowerPoint Presentation
- Draft Purpose and Need Statement (pages that have been revised per agency comments)
- Revised Draft Section 6002 Project Coordination Plan
- Agency comments and responses to Section 6002 Coordination Plan, Project Study Area, and Purpose and Need Statement

Purpose:

The purpose of the meeting was to discuss comments received from the agencies on the draft Section 6002 Coordination Plan, draft Project Study Area, draft Purpose and Need Statement, and to discuss and receive comments on the draft alternative screening methodology and alternative concepts, and to solicit comments and/or Issues of Concern from Participating Agencies in this regard. Representatives from the North Carolina State Ports Authority (NCSPA) were in attendance to provide an overview of the Port of Wilmington and the proposed North Carolina International Terminal (NCIT).

General Discussion:

The following information was discussed at the meeting.

- Jennifer Harris began the meeting with introductions and a review of the agenda. After this introduction, Jennifer asked if there were any objections regarding changing the agenda to allow Stephanie Ayers, NCSPA, to give her presentation first. With no objections heard, Stephanie Ayers began a presentation on the North Carolina Ports.
- **NCSPA Presentation:** Stephanie Ayers gave a presentation to provide agency members information regarding the NCSPA and the Port of Wilmington, as well as the proposed NCIT and how it relates to the Cape Fear Skyway project. Printed copies of the PowerPoint slides were provided to meeting attendees. Highlights of the presentation and discussion items are as follows:
 - Growth at the Port of Wilmington is continuing, and has not seen a large decline in shipments like other US ports. Future forecasts predict that east coast port traffic will increase because east coast ports will attract larger vessels from Asia and India that will be able to travel through the expanded Panama Canal.
 - The Port of Wilmington currently has infrastructure challenges, including the depth of the navigational channel and vertical clearance issues due to the Progress Energy transmission lines down river from the Port.
 - The Port of Wilmington hosts mainly a truck market, with 30 to 40 percent of trucks traveling along Interstate 40 to Greensboro.
 - The NCSPA owns 100 acres of land north of the Port of Wilmington (on the east bank of the Cape Fear River) and 96 acres of land south (and inland) that are planned expansion areas for the Port.
 - The Port's turning basin in the navigational channel of the Cape Fear River is currently 1,200 feet in diameter, and there are plans to expand the turning basin to 1,400 feet. The current navigational channel is dredged to 42 feet. Fifty feet is needed to support larger vessels.
 - The NCSPA believes a crossing north of the Port of Wilmington (in the vicinity of the existing Cape Fear Memorial Bridge) would be advantageous due to the elimination of navigational clearance issues and excellent Interstate access, but believes a crossing north of the Port could be an obstacle to future development at the Port (if the Port property is traversed). Obstacles with a northern crossing include:
 - Issues with crossing the wide turning basin, as a substantially larger main span would be needed to cross the 1,200-foot width of the basin, as well as maintain enough vertical clearance for any vessels that utilize the turning basin.
 - A bridge crossing at this location would not be consistent with the Wilmington Urban Area Metropolitan Planning Organization's (WMPO) 2030 Long Range Transportation Plan (2030 LRTP).
 - Trucks would still have to travel down US 421 to access the south gate of the Port.
 - The NCSPA plans to open the NCIT in Southport, NC that will serve to complement the existing Port of Wilmington. It will be approximately 600 acres with 4,600 linear feet of berth. Jennifer Harris asked about how the opening of the NCIT would affect traffic into the Port of Wilmington. Stephanie Ayers explained that only larger carriers would use the NCIT, and smaller carriers with capacities smaller than 8,000 twenty-foot equivalent units (TEU) would still utilize the existing Port. The NCIT will be expensive to use which will deter the smaller carriers, who will still use the Wilmington port facility. She explained

that if the NCIT was not built, the navigational channel to the existing Port would need to be deepened to accommodate larger vessels.

- A discussion was held regarding the size of vessels using the Port and how this would affect the size of a new bridge crossing of the Cape Fear River. Stephanie Ayers explained that the Cooper River Bridge in Charleston, SC has 186 feet of vertical clearance; anything lower than that would likely hamper future vessel activity to the existing Port of Wilmington.
- Jennifer Harris asked about the schedule of the proposed dredging of the Cape Fear River for the NCIT. Stephanie Ayers explained that a feasibility study and Environmental Impact Statement had not been completed yet, but best case would be in the 2017 to 2020 timeline. Fritz Rohde noted that expansion of the navigational channel in the Cape Fear River would have significant impacts to Essential Fish Habitat and fish nurseries.
- The North Carolina Department of Transportation is completing a feasibility study for a new road connector between the NCIT and the interstate. This future facility could be open to traffic in 2017.
- Mike Kozlosky stressed that access to the Port of Wilmington is not the only aspect when considering the need for the Cape Fear Skyway project. There are still substantial traffic capacity deficiencies in the area.
- **Project Presentation:** David Griffin gave a presentation to review the project and review comments received thus far on the draft Section 6002 Coordination Plan, the draft Project Study Area, and the draft Purpose and Need Statement. Printed copies of the responses to these comments by NCTA were provided to meeting attendees. Highlights of the discussion are as follows:
 - Steve Sollod inquired about the logical terminus on the east side of the study area. David Griffin explained that the eastern terminus for all alternatives will be US 421.
 - It was agreed by those in attendance that Issues of Concern will be addressed before moving on with subsequent studies in the project. This will be revised in Section 6.7 of the Draft Section 6002 Coordination Plan.
 - The Draft Section 6002 Coordination Plan will be revised to reflect that NCDENR – Division of Coastal Management and other agencies are involved in the permitting process.
 - Section 11.2.3 of the Draft Section 6002 Coordination Plan will be revised to state that private mitigation banks are available.
 - Section 12.5 in the Draft Section 6002 Coordination Plan will be revised to clarify that the public notice is for LEDPA selection.
 - Brad Shaver commented that the military deployment discussion in the Draft Purpose and Need Statement is weak, considering there are no troop deployments from MOTSU and most of the traffic which comes to MOTSU arrives via train. David Griffin noted that US 17 is a STRAHNET and part of the National Highway System. A further comment is that movement of military goods is not specifically stated as a project need. Stephanie Ayers noted that the Port of Wilmington is a strategic seaport, and moves military cargo.

Action Items:

- NCTA to send Jessie O'Neal Draft Purpose and Need Statement for review.

- NCSIPA and USACE to submit comments on the draft Purpose and Need Statement. USFWS and NCWRC will not be submitting comments.
- Agency members to send comments on the Draft Purpose and Need Statement and alternative screening methodology and concepts by 05/04/10.
- NCTA to revise draft Section 6002 Coordination plan and draft Purpose and Need Statement based on additional comments received.

Resolutions:

- None

Next Steps:

- The next TEAC meeting for the Cape Fear Skyway is anticipated to be June 15, 2010.



Turnpike Environmental Agency Coordination (TEAC) Meeting

MEETING MINUTES DRAFT

Date: September 8, 2010
8:30 a.m. To 9:00 a.m.
NCTA Board Room

Project: STIP R-2721, R-2828, and R-2929 – Triangle Expressway Extension (Raleigh Outer Loop)

Triangle Expressway Extension Spotlight:

Attendees:

George Hoops, FHWA
Eric Alsmeyer, USACE
Gary Jordan, USFWS
Travis Wilson, NCWRC
Deloris Hall, NCDOT (via telephone)
Doug Taylor, NCDOT-Roadway Design Unit
Jennifer Harris, NCTA
Christy Shumate, HNTB

John Burris, HNTB
Joanna Rocco, URS
David Griffin, URS
Roy Bruce, Lochner
Brian Eason, Lochner
Kristin Maseman, Lochner
Wendee Smith, Mulkey

Presentation Materials (Posted on TEAC website):

- Agenda
- Draft Meeting Minutes – 8/10/10 TEAC Meeting
- Handout 4 – Alternatives Screening, Quantitative Third Tier Screening of Alternative Concepts
- Newsletter #2

Purpose:

Continue discussion on purpose and need statement and alternatives screening.

General Discussion:

The following information was discussed at the meeting:

- **Purpose and Need and Alternatives Screening Methodology:** NCTA has received comments on the draft Purpose and Need Report from NCDENR-DWQ. Comments on both purpose and need and the alternatives screening methodology will be accepted until after the September public workshops. A revised Purpose and Need Report and a draft Alternatives Report will then be completed and made available to agencies, local governments and the public for comments. Other agencies indicated they do not plan to submit written comments and will defer to NCDENR-DWQ's comments.
- **Alternatives Screening:** Lochner summarized the results of the quantitative third tier screening of alternatives carried forward from the second tier screening, which included nine new location alternatives, two improve existing facilities alternatives, and two hybrid new location/improve

existing facilities alternatives. This round of screening included more evaluation criteria and a more detailed examination of impacts than the second round of screening.

USFWS and NCWRC stated that National Heritage Program (NHP) occurrences should not be used in the impacts summary table in Handout 4 because the NHP GIS database is too general to provide useful comparative information. Instead, they suggested that federal and state listed species occurrences would provide more useful comparative information.

The agencies agreed to eliminate Improve Existing Alternative #3 and Hybrid Alternative #3 (each includes upgrading and widening Ten-Ten Road) because each of these would require much larger numbers of relocations than all other alternatives without providing clear advantages. In addition, because Improve Existing Alternative #1 and Hybrid Alternative #1 remain under consideration, viable alternatives are not limited to new location options at this point.

NCTA will discuss with NCDOT Roadway Design staff the nine new location alternatives, Improve Existing Alternative #1, and Hybrid Alternative #1 to identify geometric constraints and other design considerations influencing the further development of these alternatives. After presenting these alternatives to the public at the September workshops, NCTA expects to select Detailed Study Alternatives (DSAs) by November of this year.

- **Section 6002 Cooperating Agency Invitation:** USACE has received the FHWA letter inviting it to be a cooperating agency under the Project Coordination Plan and will sign and return it to FHWA soon.

Previous Action Items:

- FHWA to distribute letters inviting federal agencies to become cooperating/participating agencies under the Project Coordination Plan.
[Letters were distributed on August 17, 2010.]
- Agencies to provide final comments to NCTA on Project Coordination Plan.
[No additional comments were received.]
- NCTA/Lochner to clarify distinction between traffic study area and project study area for alternatives development in Purpose and Need Report.
[Clarification will be included in revised Purpose and Need Report, available by mid-October, after the public workshops.]
- HNTB to review existing and projected traffic for US 401 and consider adding this information to traffic figures in the Purpose and Need Report.
[This information was not included on the initial traffic figures because only segments that experienced more than 10 percent change in traffic between the No-Build and Build scenarios were modeled; however, this traffic information for US 401 will be added for information.]
- Agencies to provide comments on Draft Purpose and Need Report.
[Written comments were received from NCDENR-DWQ. Other agencies indicated that they will not provide additional written comments.]
- NCTA/Lochner to consider revising first tier qualitative screening of alternative concepts to clarify the link between this screening and the measures of effectiveness for project purpose.
[Clarification will be included in draft Alternatives Report, available by mid-October, after the public workshops.]
- NCTA/Lochner to complete third tier qualitative screening of alternatives and present results at September TEAC meeting.
[Handout 4 presented at the September TEAC meeting includes the results of the third tier qualitative screening.]
- Agencies to provide comments on alternatives screening methodology and draft alternative concepts.
[A draft Alternatives Report will be prepared following public workshops in late September and made available for agency and public review and comment.]

New Action Items:

- Lochner to revise alternatives impact table to replace Natural Heritage Program Occurrences as an evaluation criterion with separate breakouts of federal and state protected species.

Resolutions:

- None

Next Steps:

- Public workshops on September 21, 22, and 23, 2010.
- Revise Purpose and Need Report according to agency and public comments.
- Prepare draft Alternatives Report and circulate for agency and public review and comment.

**MEETING MINUTES
(Draft)**

Date: September 8, 2010
9:45 A.M. To 11:15 A.M.
NCTA Board Room

Project: STIP U-4738 – Cape Fear Skyway

Cape Fear Skyway Spotlight:

Attendees:

George Hoops, FHWA
Scott McLendon, USACE
Brad Shaver, USACE
Fritz Rohde, NMFS (via telephone)
Gary Jordan, USFWS
David Wainwright, NCDENR-DWQ
Brian Wrenn, NCDENR-DWQ
Travis Wilson, NCWRC
Steve Sollod, NCDOT

Mike Kozlosky, WMPO
Stephanie Ayers, NCSPA
Doug Taylor, NCDOT
Jennifer Harris, NCTA
Christy Shumate, HNTB
John Burris, HNTB
David Griffin, URS
Peter Trencansky, URS
Joanna Rocco, URS

Presentation Materials (Posted on TEAC website):

- Agenda
- Project PowerPoint Presentation
- Draft Purpose and Need Statement
- Draft Alternatives Screening Summaries
- Agency comments and responses to Purpose and Need Statement and Alternatives Screening Summaries

Purpose:

The purpose of the meeting was to discuss comments received from the agencies on the draft Purpose and Need Statement and the first and second tier alternative screening summaries, and to solicit comments and/or Issues of Concern from Participating Agencies in this regard.

General Discussion:

The following information was discussed at the meeting.

- URS reviewed the comments received thus far on the draft Purpose and Need Statement. Printed copies of the responses to these comments by NCTA were provided to meeting attendees. Highlights of the discussion are as follows:
 - NCWRC inquired about the truck traffic and if it is now underestimated since the North Carolina International Terminal (NCIT) in Southport, NC is not being built. Stephanie Ayers explained that traffic will probably only increase now that there are no plans for the NCIT. The Port of Wilmington will continue to expand at its existing location, and preliminary studies are currently taking place by the NCSPA regarding traffic projections.
 - NCDENR-DCM inquired about his previous comment regarding the Cape Fear Memorial Bridge and how its replacement could affect traffic movements in the area. URS explained that there will be a number of alternatives for the project, including upgrade existing alternatives that either replace the existing Cape Fear Memorial Bridge, or supplement the existing bridge by providing a new location bridge within close proximity to the existing bridge. If the selected alternative does not involve the replacement of the existing Cape Fear Memorial Bridge (for example the No Build or new location alternative), the NCDOT would need to determine if a replacement bridge would be necessary at some point in the future.

- A discussion was held regarding whether or not consistency with the Strategic Highway Corridor Initiative (and other transportation plans) should be included as part of the purpose statement of the project. It was agreed that this should be a secondary benefit of the project, and will be revised in the Purpose and Need Statement. Mike Kozlosky stressed that the Wilmington Urban Area Metropolitan Planning Organization's (WMPO) Long Range Transportation Plan (LRTP) is supported by the community, and any alternative chosen for detailed study should be consistent with this plan. URS noted that if the parameter to meet the goals of the SHC, Intrastate System and LRTP are moved to secondary needs it will be important to develop performance measures that capture the intent of these plans, because improving traffic flow and providing for better freight movements would need to be explained further such that the alternatives meet the local vision and goals for this corridor.
- It was agreed that the Purpose and Need Statement was ready to be presented to the public.
- URS reviewed the comments received thus far on the draft alternatives screening. Printed copies of the responses to these comments by NCTA were provided to meeting attendees. Highlights of the discussion are as follows:
 - NCSIPA inquired whether improvements on the eastern side of the project would be included in designs. David Griffin explained that studies would include an evaluation of the transportation network on the eastern side of the project and associated impacts. If appropriate, identified improvements will be incorporated into functional designs for the Detailed Study Alternatives.
 - USACE suggested that LIDAR data be used as a means to identify wetlands within the corridors studied in the alternatives screening. URS will look into using this information to provide more accurate results regarding wetland impacts during alternative screening.

Previous Action Items:

- Agencies to send comments on the Draft Purpose and Need Statement and alternative screening methodology and concepts by 05/04/10.
[Comments received from USEPA, USACE, NCSIPA, NCDENR-DCM, and NCDENR-DWQ]

New Action Items:

- Agency members to send remaining comments on alternative screening methodology and concepts to NCTA.

Resolutions:

- Agreement was reached on the Purpose and Need Statement for the project.

Next Steps:

- Revise Purpose and Need Report according to agency comments.
- Continue alternatives screening process.

**MEETING MINUTES
(Draft)**

Date: September 8, 2010
12:30 PM to 1:50 PM
NCTA Board Room

Project: STIP R-2576 Mid-Currituck Bridge Study - BRSTP-OOOS(494)

Mid-Currituck Bridge Spotlight:

Attendees:

Bill Biddlecome, USACE
Scott McLendon, USACE
Brad Shaver, USACE
Gary Jordan, USFWS
Ron Sechler, NMFS (by phone)
George Hoops, FHWA
Cathy Brittingham, NCDENR-DCM
Kevin Hart, NCDENR-DMF (by phone)
Brian Wrenn, NCDENR-DWQ
David Wainwright, NCDENR-DWQ
Travis Wilson, NCWRC
Jennifer Harris, NCTA
Lonnie Brooks, NCDOT-Structure Design
Anne Gamber, NCDOT-Hydraulics Unit
Doug Taylor, NCDOT-Roadway Design
Scott Slusser, NCDOT

Elizabeth Lusk, NCDOT-NEU
Bruce Ellis, NCDOT-NEU
Kathy Herring, NCDOT-NEU
Logan Williams, NCDOT-NEU
Matt Lauffer, NCDOT-Hydraulics Unit
Jose Luque, CDG-ACSID
Bernardo Palicio, CDG-Dragados USA
Jose M De Iturriaga, CDG-Dragados USA
Roy Bruce, CDG-Lochner
Brian Eason, CDG-Lochner
Ron Ferrell, CDG-PBS&J
John Page, PB
Don Brown, PB
Tracy Roberts, HNTB
Max Price, CDG-Wetherill Engineering
Neal Williams, CDG-Weeks Marine
Mark Redderodd, CDG-Weeks Marine

Persons Who Were Provided Materials but Were Unable to Attend:

Christopher Militscher, USEPA
Sara Winslow, NCDENR-DMF

Presentation Materials: (All materials posted on the TEAC website)

- Meeting Agenda
- Reasons for a Determination that ER2 is Not a Practicable Alternative to a Bridge Across Currituck Sound (Handout 25)
- Mid-Currituck Bridge Stormwater Management (Handout 26)
- Construction Methodologies for Mid-Currituck Bridge (Handout 27)
- PowerPoint slides
- Elgin Sweeper Guide

Purpose:

Discuss agency comments on materials distributed at the August 10 meeting, as well as bridge stormwater management, bridge construction, and the practicability of ER2.

General Discussion:

The following information was discussed at the meeting:

- **Big Picture** – PB (John Page) gave a brief description of the steps NCTA is following to provide information needed for selection of a Preferred Alternative. He indicated that in August, funding was discussed, the focus on bridge corridors was narrowed to C1 only, and it was decided MCB2 could not be the Preferred Alternative or Least Environmentally Damaging Practicable Alternative (LEDPA) because its impacts are greater than MCB4, it lacks public support and it could not be funded at this time.

NCTA met with the emergency management officials on August 19th. At this meeting, it was

decided to identify reversing a center turn lane as the preferred hurricane clearance strategy, which is consistent with the comments received during the DEIS comment period on hurricane evacuation from the public and USEPA. Today's meeting addressed stormwater management and construction techniques for a Mid-Currituck Bridge. Next month's meeting will address issues related to Maple Swamp. With regard to avoiding and minimizing NC 12 impacts, NCTA is pursuing an alternative design, which would reduce the amount of four lanes by two-thirds, which has been agreed to by NCDOT Congestion Management, NCDOT Division 1, NCDOT Roadway Design, and emergency management representatives. The change would reduce community impacts and project cost. Groundwater and surface water studies for Maple Swamp are underway. Maple Swamp crossing options will be considered and discussed at the October TEAC meeting. By the October meeting, all the information needed to make a preferred alternative decision should be available.

- **August Meeting Comments** – PB (John Page) noted no written comments on the August 10th meeting have been received. The floor was opened to anyone who had comments they wanted to make regarding that meeting. NCDENR-DCM (Cathy Brittingham) commented on Handout 22, page 3, asking about the status of Currituck County's request for a water pipe under the bridge. NCTA (Jennifer Harris) responded that the county had inquired about the possibility of putting a water pipe on the bridge, but this issue has not progressed beyond the initial inquiry. NCTA cannot fund this and have not agreed to place a water pipe on the bridge. PB (John Page) added that the cost of the bridge would increase just for the added support structure necessary for the water pipe. He also noted that the county indicated that a pipe on the bridge would give them more flexibility in water distribution to respond to drought situations or other emergencies. Water supplies are adequate on the Outer Banks. NCTA (Jennifer Harris) said that the TEAC members would be kept apprised if anything changes with this. NCDENR-DCM (Cathy Brittingham) asked if this would be discussed in the FEIS. NCTA (Jennifer Harris) stated that Currituck County only indicated that it would be useful to have the water pipe on the bridge, but they have not asked again nor given any more information than their initial inquiry.

Other comments were solicited but none were provided. NCDENR-DCM (Cathy Brittingham) said that they had some technical comments on Handout 23 but that she would discuss outside of the meeting.

- **Stormwater on Bridges** – NCDOT (Matt Lauffer) described the *Stormwater Runoff from Bridges* report completed by NCDOT, US Geologic Survey, NC Division of Water Quality, NC State University and others on stormwater runoff considerations on bridges throughout North Carolina. NCDOT (Matt Lauffer) requested the agencies provide to him any preferred focus areas for the study team's planned presentation at the September 23 Interagency meeting. The report is available on the NCDOT website (<http://ncdot.org/doh/preconstruct/highway/hydro/BMP/default.html>). NCDOT (Matt Lauffer) indicated that he could send a copy of the report via e-mail if anyone needed it. Contact him at mslauffer@ncdot.gov.
- **Handout 26** – CDG-Lochner (Roy Bruce) presented a strategy for Mid-Currituck Bridge stormwater management. Research into best practices resulted in finding that frequent bridge deck cleaning with state-of-the-art technology removes most of the pollutants. In the past 10-15 years, vacuum sweepers have improved and do a much better job than they once did. A video was shown of one particular manufacturer of a vacuum sweeper (though no manufacturing company is preferred). The manufacturer says that 90 to 97 percent of pollutants are picked up. The vacuum sweeper meets both PM10 and PM2.5 standards. Based upon the research done, CDG-Lochner (Roy Bruce) believes this vacuum sweeper could be an effective tool, with frequent sweeping (weekly during the 13-week peak season), for the Mid-Currituck Bridge. CDG-Lochner (Roy Bruce) added that where the bridge crosses wetlands on the Outer Banks shoreline, the runoff would be captured and treated. Scuppers allowing direct discharge would be used along the remainder of the bridge. The Virginia Dare Bridge over the Croatan Sound uses the same approach.

The capital cost of this two-fold strategy would be approximately \$1 million. The equipment would be replaced every 10 years. The operating cost of this vacuum sweeper is substantially lower than other options. In addition to being cost-effective, the vacuum sweeper meets the needs and is consistent with the stormwater on bridges report (described earlier by NCDOT [Matt Lauffer]).

NCDENR-DWQ (David Wainwright) asked if the vacuum sweepers lose efficiency over time. The manufacturer claims that as long as the equipment is maintained, they do not lose efficiency. NCTA through a contract with CDG would ensure the equipment is properly maintained and that sweeping occurs on schedule. NCDENR-DWQ (David Wainwright) asked if any debris would be pushed into the scuppers by the vacuum sweeper. CDG-Lochner (Roy Bruce) stated that the manufacturer claims that they do not; the brushes when properly aligned would sweep the debris under the vehicle which would then vacuum up the debris and filter the air so that pollutants are not released into the air. NCDENR-DWQ (David Wainwright) asked if there was any research that was not from the manufacturer. CDG-Lochner (Roy Bruce) indicated he had studies from Seattle, MnDOT, and others. All of the research, however, has been done on city streets where, unlike a bridge, much of the runoff comes from adjoining land use rather than vehicles. NCDENR-DWQ (David Wainwright) raised the concern that whatever is not picked up by the vacuum sweeper goes into the sound. There are other things that affect turbidity and other sensitive natural systems. CDG-Lochner (Roy Bruce) said that research on the water quality effects would be needed. NCTA would be amenable to research opportunities with universities and the agencies. NCDENR-DMF (Kevin Hart) asked about the nature of the three percent of pollutants that would not be picked up by the vacuum sweeper. CDG-Lochner (Roy Bruce) responded that he wasn't sure what those pollutants were but that the frequency of sweeping could be adjusted more or less depending on its effectiveness to maximize what is picked up. He added that the vacuum sweeper would be stored on site at an NCTA facility, so it would be available 24 hours per day to be used by trained professionals so that it could be used at times such as traffic crashes, in advance of storms, etc.

NCDENR-DWQ (David Wainwright) stated that stormwater rules are more stringent now than they were when the other coastal bridges were built. The Currituck Sound is a very sensitive area and is very susceptible to turbidity. The first 1.5 inches of rain water on new built upon area must be retained and treated. NCDENR-DWQ (Brian Wrenn) added that he was familiar with the NCDOT study and that there still would be pollutants left after sweeping that need to be treated. Reading the letter of the law, all of the pollutants should be treated, not just the sensitive wetland areas on the east end of the bridge. He added that the sweeping is a great tool, but there would still be pollutants that would need to be treated.

NCDENR-DWQ (David Wainwright) also stated that water would need to be piped off the bridge on the east and west ends except over open water. There was discussion regarding what was meant by "open water." NCDENR-DWQ (Brian Wrenn) noted that maps would need to be studied to determine where the SAVs are located. NCDENR-DWQ (David Wainwright) stated that bridge piping would need to be extended beyond the coastal marsh and include the SAVs. NCDENR-DWQ (Brian Wrenn) said that while he was in agreement with the concept of partial capture and treatment, the details of what additional piping might be needed still need to be worked out. NCDENR-DWQ will provide comments.

USACE (Scott McClendon) asked if it was required for the pollutants to be collected and treated. NCDENR-DWQ (David Wainwright and Brian Wrenn) answered that it was. NCTA responded that they would be capturing and treating the runoff on the east end of the bridge. NCDENR-DWQ (David Wainwright) asked for clarification on the environmental requirements mentioned on page 6, fourth paragraph of Handout 26. CDG-Lochner (Roy Bruce) explained that with sweeping, it would not be necessary to treat those pollutants since they would be captured prior to being suspended in rainwater and released into the sound. NMFS (Ron Sechler) added that the NCDENR-DWQ comments reflect their concerns as well.

- **Handout 27** – CDG-Lochner (Roy Bruce) presented the construction techniques discussed in Handout 27. The three types of potential construction techniques are barge based, temporary construction trestle, and top down construction. Barge based can only be done in water depths 6 feet or greater. Where there is less than 6 feet of water depth, either temporary construction trestle or top down construction would need to be utilized, or the area would need to be dredged to 6 feet. Pile setup considerations were discussed, and each of the seven options/combinations of construction techniques were presented. Pile setup time heavily influences construction time if top-down construction is used. As each set of piles is placed one must wait 2 to 30 days before the weight of caps and superstructure can be added. With barge and trestle construction, multiple sets of piles can be placed before the cap and superstructure is added. With top down, the foundations must be built in sequence so construction essentially stops during the set-up time, lengthening the construction period.

NMFS (Ron Sechler) asked where the disposal sites would be for dredging spoil. CDG-Lochner (Roy Bruce) stated that there were five options currently being examined for potential disposal sites, but nothing has been decided. Some of the options include using the dredged material to raise the elevation of the Currituck Sound bottom near SAVs to encourage more SAV growth, refilling the dredged areas, using spoil as top dressing, or placing it in an old borrow site on US 158. However, more study would need to be done to determine what would be the best option.

NCDENR-DCM (Cathy Brittingham) stated she had many questions, but because the meeting was nearing its end, she would submit these at a later date so that we could move to the discussion of the practicability of ER2. She did ask if the SAV locations mapped were from the 2007 USACE survey. CDG-Lochner (Roy Bruce) stated that they were. NCDENR-DCM (Cathy Brittingham) wanted the more recent 2010 NCDOT SAV survey to be used; CDG-Lochner (Roy Bruce) noted that the data from the 2010 survey would be folded in once available.

NCDOT NEU (Bruce Ellis) indicated that the SAV field work has been completed. He noted that the SAV study was not being done specifically for the Mid-Currituck Bridge project and its corridor.

NCDOT (Lonnie Brooks) asked if there were any pile alternatives were considered besides steel piles. CDG-Lochner (Roy Bruce) answered that concrete was examined, but NCTA was leaning toward using the steel piles; no final decision on pile type will be made until completion of ongoing geotechnical studies. NCDENR-DWQ (David Wainwright) asked what the cost difference was between the two. CDG-Weeks Marine (Neal Williams) answered that steel is cheaper and the equipment to install it is smaller. CDG-Lochner (Roy Bruce) added that it was easier to transfer steel to the site.

- **Handout 25** – PB (John Page) presented information on why NCTA believes ER2 is not a practicable alternative. In NCTA's opinion ER2 is logistically unavailable and incapable of being implemented for four reasons (see details in PowerPoint slide). More detail is presented in the handout. PB (John Page) asked the TEAC members to provide comments within the next 30 days.
- **Wrap up/Next Steps** – NCTA (Tracy Roberts) presented the next steps in the process. USACE (Scott McClendon) stated that USACE was struggling with the issue of funding and the state legislature defining project locations. PB (John Page) noted that the project has a long history of being planned as a toll project. It was listed as being funded by other sources in the State Transportation Improvement Program in effect with the 1998 Draft Environmental Impact Statement was released. The General Assembly authorized NCDOT to charge tolls on the bridge in that same period. There are system wide effects that need to be taken into account. NCDENR-DCM (Cathy Brittingham) noted that early in the current study, NCDOT was taking a systemwide approach to project planning. PB (John Page) stated that this is what was done in developing and assessing alternatives in the DEIS. The only road improvement for the project area in the State Transportation Improvement Program is a NC 12/US 158 interchange. It is funded for planning only.

NCTA (Tracy Roberts) thanked the attendees for their participation and adjourned the meeting at 1:50 PM.

**MEETING MINUTES
(Draft)**

Date: September 8, 2010
2:00 PM to 5:00 PM
NCTA Board Room

Project: STIP R-3329/R-2559 Monroe Connector/Bypass – STP-NHF-74(90)

Monroe Connector/Bypass Spotlight:

Short-listed design-build teams were each allowed 45 minutes to present information, ask questions, and get feedback from agency representatives. To protect the confidentiality of the design-build process, minutes will not be provided for these sessions.



Turnpike Environmental Agency Coordination (TEAC) Meeting

MEETING MINUTES (Draft)

Date: December 7, 2010
10:45 A.M. To 12:15 A.M.
NCTA Board Room

Project: STIP U-4738 – Cape Fear Skyway

Attendees:

George Hoops, FHWA
Brad Shaver, USACE
David Wainwright, NCDENR-DWQ
*Amy Simes, NCDENR-DWQ
Fritz Rohde, NMFS
Gary Jordan, USFWS
Travis Wilson, NCWRC
Steve Sollod, NCDOT
Chris Militscher, USEPA
*Jessie O'Neil - NCDMF
Mike Kozlosky, WMPO
Tara S. Murphy, WMPO
*Renee Gledhill-Early, SHPO
Stephanie Ayers, NCSPA

Doug Taylor, NCDOT
Tony Houser, NCDOT
Tristram Ford, NCDOT
Missy Pair, NCDOT
*Regina Page, NCDOT
Lonnie Brooks, NCDOT
Jennifer Harris, NCTA
John Burris, HNTB
Kevin Markham, ESI
David Griffin, URS
Peter Trencansky, URS
Susan Westberry, URS
Joanna Rocco, URS

**Joined meeting via telephone*

Presentation Materials (Posted on TEAC website):

- Agenda
- Project PowerPoint Presentation
- Draft Alternatives Screening Summaries – Tier One and Tier Two

Purpose:

The purpose of the meeting was to discuss comments received from the agencies on the draft alternatives screening, and the results of the first and second tier of alternatives screening, and to solicit comments and/or Issues of Concern from Participating and Cooperating Agencies in this regard.

General Discussion:

The following information was discussed at the meeting.

- USACE suggested that an explanation to the interchange placement on existing US 17 be added to the screening summary.

- WMPO explained that Brunswick County, New Hanover County, and the City of Wilmington are moving forward with adopting a transportation corridor official map to protect the northern alignment. The Town of Leland does not support, and it is possible that they will have to file a variance if they want to develop within the corridor.
- NMFS suggested that Primary Nursery Areas be included in the impact assessment.
- NCDCM indicated that Areas of Environmental Concern (AEC's) as currently defined (west of River Road and east of NC 133) need to be calculated 75 feet landward of the high water level since the Cape Fear River is an Estuarine Shoreline, as opposed to 30 feet from the edge of tidal wetland, as it is currently calculated in the impact assessment. The 30-foot buffer is for inland waters.
- USEPA suggested that columns with zero impacts for all corridors, such as fire stations, churches, schools, etc., be taken out of the impact table, as they have no effect on the outcome on the evaluation of alternatives. It can be stated in the report that these parameters were analyzed, but do not need to be shown.
- USEPA suggested that minority and low-income impacts be calculated using the amount of displacements within each segment and block group, as opposed to using acreage.
- USEPA noted that it is problematic for 303(d) listed streams to be in the same category as HWQ and ORW streams. They should be separate categories, and the amount of linear feet of impact should be shown in the impact table. NCDWQ also noted that the reasons for 303 (d) listings should be included.
- USFWS suggested that the protected species column be broken out into Federally Threatened and Endangered Species and State Listed Species for clarification. NCTA noted that once detailed study alternatives are developed, field verification of habitat and/or presence will be determined for Federally Threatened and Endangered Species. At this point in the screening, known occurrences within one mile of each corridor were used.
- NCWRC suggested that it may be more productive to look at impacts at the segment level. The next version of the screening information will show impacts based on corridors as well as segments. A discussion was held regarding whether or not it was necessary to include the quartile ranking as part of the alternatives screening. It was decided that the ranking exercise would remain in the screening summary and will be discussed at the next TEAC meeting.
- No agency members suggested that any segments or corridors be removed from further study until the recommended revisions are done. The revised results of the impact assessment will be presented at the next TEAC meeting.

Action Items:

- NCTA to upload the final draft of the Purpose and Need Statement to Constructware for agency review.
- NCTA to revise alternatives impact assessment and present to agencies at next TEAC meeting.

Resolutions:

- None.

Next Steps:

- The next TEAC meeting for the Cape Fear Skyway is scheduled for January 20, 2011.



Turnpike Environmental Agency Coordination (TEAC) Meeting

MEETING MINUTES FINAL

Date: January 20, 2011
8:00 A.M. To 9:30 A.M.
NCTA Board Room

Project: STIP U-4738 – Cape Fear Skyway

Attendees:

George Hoops, FHWA
Brad Shaver, USACE
Scott McClendon, USACE
David Wainwright, NCDENR-DWQ
Amy Simes, NCDENR-DWQ
*Fritz Rohde, NMFS
Gary Jordan, USFWS
Travis Wilson, NCWRC
Steve Sollod, NCDCM
Chris Militscher, USEPA
*Jessie O'Neil - NCDMF
Mike Kozlosky, WMPO
*Stephanie Ayers, NCSPA

Doug Taylor, NCDOT – Roadway Design Unit
Lonnie Brooks, NCDOT – Structure Design Unit
Herman Huang, NCDOT – Human Environment Unit
Michael Bright, NCDOT – Utilities Unit
Jennifer Harris, NCTA
John Burris, HNTB
Spencer Franklin, HNTB
Kevin Markham, ESI
Steve Browde, Lochner
David Griffin, URS
Peter Trencansky, URS
Susan Westberry, URS
Joanna Rocco, URS

**Joined meeting via telephone*

Presentation Materials (Posted on TEAC website):

- Agenda
- Project PowerPoint Presentation
- Draft Alternatives Screening Summary Handouts – Tier One Handout and Tier Two Handout

Purpose:

The purpose of the meeting was to discuss comments received from the agencies on the draft alternatives screening, and the results of the first and second tier of alternatives screening, and to solicit comments and/or Issues of Concern from Participating and Cooperating Agencies in this regard.

General Discussion:

The following information was discussed at the meeting.

- NCDCM questioned why minority and low-income impacts were separated in the alternatives screening impact table. URS explained that the US Census separates the data, therefore it is presented separate. Both sets of information are considered in an environmental justice analysis. The impact analysis now calculates the impacts to minority and low-income populations based on the amount of residential displacements and not the amount of acreage within each corridor segment.

- USACE asked whether or not the Strategic Highway Corridor (SHC) component of the purpose and need would alone result in the elimination of alternatives in the Tier One screening. It was explained that it would not, as the SHC component of the purpose and need statement is now presented as a secondary need.
- WMPO requested an explanation for why the Mass Transit Alternative was not carried forward to the Tier Two screening. It was explained that while this alternative could provide minor improvements, they are not enough to be an acceptable solution to the projected future traffic capacity issue. There are also no notable plans in the region with respect to mass transit, such as a commuter rail plan, that would suggest mass transit would increase capacity to an acceptable level.
- USACE inquired about whether or not there were case studies related to when Transportation Systems Management (TSM) or Mass Transit Alternatives should be considered for a project. URS explained that per FHWA guidance, detailed studies are not warranted on projects located in regions with populations of less than 200,000. It was assumed that the Wilmington region would have a population greater than 200,000; however, the Wilmington Urban Area Long Range Transportation Plan did not include transit services along the US 17 corridor that would reduce traffic volumes to a level that would result in acceptable traffic operations. Further, it was determined that due to the magnitude of the traffic deficiencies (many intersections having a delay twice the threshold for Level of Service F) that TSM type improvements would not alleviate the traffic operations problems.
- NCDCM questioned why it was necessary to break out impacts to US 421 in the alternatives screening, and show the results with and without those segments along US 421. It was explained that this was done so that the upgrade existing alternative would not be discounted (it ranked low in the screening due to impacts along US 421). The upgrade existing alternative (widening arterial and freeway options) will be carried forward to the next phase of screening, as there will likely be ways to reduce the amount of impacts through avoidance and minimization, and by more closely assessing the magnitude of improvements needed on US 421.
- USACE requested that Segment 15 remain in the alternatives screening, since it's likely that environmental impacts from this segment, as opposed to Segment 12, will be less. It was agreed that Segment 15 should be widened for use in the next phase of screening, so that there will be more available area for possible preliminary alternatives within this area. USACE also requested information on the corridor widths that were used for impact calculations. URS explained that a width of 500 feet was used on all segments, with the exception of Segment 26 and Segment 27 along US 421, where 160 feet was used. The median width assumed is 46 feet. Bridge heights are assumed to be 187 feet for new location alternatives, and 135 feet (the height of the current Cape Fear Memorial Bridge when raised for vessel traffic) for the upgrade existing alternative.
- NCDCM suggested that the hazardous materials column in the screening table be eliminated since all segments have no impact. NCDCM also suggested that any columns that have zeros be indicated by a hyphen as opposed to a zero to remove clutter from the table.
- NCDWQ suggested that the number of 303(d) listed streams crossed be used in the table for quartile ranking purposes, and the amount of linear feet of listed streams crossed will remain in the impact table for reference.
- All agency members in attendance agreed with the segments recommended for elimination from further screening (Segments 11, 12, 16, 17, 18, 19, 23, 24, and 25). Corridor 15 will be widened to allow for minimization of impacts to Brunswick Forest and natural resources within the segment area. Corridors that remain after these segments were eliminated will be carried forward to the third phase of screening, which includes preparation of conceptual designs on these preliminary alternative corridors.
- All agency members in attendance had no objections to the final Draft Purpose and Need Statement, therefore agency comments have been concluded. Public comments on the purpose and need will be solicited during the next public workshop.
- No issues of concern were raised at the meeting.

Action Items:

- NCTA/URS to revise the Tier Two alternatives impact assessment and present to agencies at next TEAC meeting.
- NCTA/URS to begin the Tier Three phase of screening based on corridors recommended for further screening. Conceptual designs will be developed to determine anticipated area of impact for these corridors. Once all tiers of the screening have been completed, a Preliminary Alternatives Analysis Report will be developed.

Resolutions:

- None.

Next Steps:

- The next TEAC meeting for the Cape Fear Skyway is anticipated for March 2011.
- Public workshops are anticipated to be held in early March 2011 to present and solicit comments on the final Draft Purpose and Need and preliminary alternatives to the public. Public comments from these meetings will be presented and discussed at upcoming agency meetings.



MEMORANDUM

To: Project File

From: Joanna Rocco

Date: April 11, 2011

Subject: Minutes of Local Officials Meeting held March 22, 2011 at 2:00 PM
North Carolina Turnpike Authority – Cape Fear Skyway Project
STIP U-4738

Meeting attendees:

Walter Futch – Town of Leland
James Knox – Town of Northwest
Brenda Bozeman – Town of Leland
Martha Currie – Town of Leland
Ken Karn – City of Southport
J. Leslie Bell – Brunswick County
Eulis Willis – Town of Navassa
Tara Murphy – Wilmington Urban Area Metropolitan Planning Organization
Marty Cooke – Brunswick County
Brenda Clemmons – Brunswick County
Steve Stone – Brunswick County
Marty Lawing – Brunswick County
Calvin Peck – Village of Bald Head Island
Joan Kinney – City of Boiling Spring Lakes
David Lewis – City of Boiling Spring Lakes
Jeff Earp – Brunswick Forest
Allen Pope – North Carolina Department of Transportation
Steve DeWitt – North Carolina Turnpike Authority (NCTA)
Jennifer Harris – NCTA
Spencer Franklin – HNTB
John Burris – HNTB
David Griffin – URS
Peter Trencansky – URS
Susan Westberry – URS
Mike Lindgren – RUS
Joanna Rocco - URS
Jack Batson
Martha Futch



Minutes of March 22, 2011 LOM Meeting

April 11, 2011

Page 2

A Local Officials Meeting was held at the Brunswick County Government Complex on March 22, 2011 at 2pm. Local officials from the study area were sent invitations to the event approximately one month prior to the meeting. The purpose of the meeting was to give local officials a chance to see the materials to be presented to the public at the evening's Citizens Informational Workshop, to be held from 5pm to 8pm at Belville Elementary School.

Jennifer Harris began the meeting with a review of the presentation to be shown at the evening's workshop. The presentation overviewed the proposed project, the purpose and need, the alternatives study process, schedule, and how the public can comment. The following is a summary of the discussion held after the presentation was given:

- The Mayor of Leland, Walter Futch, questioned the Wilmington Urban Area Metropolitan Planning Organization's (WMPO) 2035 study that shows the Level of Service (LOS) on existing roads with and without the Cape Fear Skyway project. He noted that the LOS remains low with and without the project. John Burris stated that while LOS does remain low in this study, vehicle miles traveled and vehicle hours traveled decrease, therefore showing a benefit from the project.
- Brenda Bozeman of the Town of Leland requested an explanation of why the study area had been revised throughout the years and is currently larger than it was in 2006. Jennifer Harris explained that it has been expanded to allow a larger range of alternatives to be studied for the project, including the option of upgrading existing US 17 and US 421.
- Mayor Futch inquired about whether or not truck traffic counts were current, and it was explained that traffic data for the projected is currently being reevaluated based on the latest Wilmington travel demand model developed for the newly approved Long Range Transportation Plan.
- Steve DeWitt stressed that the purpose of this study is to look at multiple solutions to a transportation problem in the area. The North Carolina Turnpike Authority has no preferred alternative, and there is currently no funding for this project. Allen Pope added that public comments and suggestions will be reviewed and considered during the decision-making process, and that public involvement would continue throughout the study process.
- A discussion was held regarding the naming convention of the project. It was explained that most citizens regard the "Skyway" project as a bridge south of the Port. Most people are not aware that it covers more options, including upgrading existing roads like US 17 and US 421.
- Mayor Futch inquired why there was not an alternative further south. It was explained that there are several conservation easements to the south of the study area, and an alignment that far south would be longer, more costly, and is not expected to attract as much traffic. Mayor Futch noted that these conservation easements could be condemned through eminent domain. David Griffin responded that the natural resources contained within the conservation areas would make it very difficult to cross when other options that avoid or minimize those impacts are practicable.
- Mayor Futch inquired about the geology in the area and noted that there are limestone sinks that could be an issue. It was explained that once Detailed Study Alternatives have been developed, more detailed studies regarding soils and geology will be performed to assess potential impacts.
- Mayor Futch inquired if there have been any studies done on the possibility of a tunnel option for the Cape Fear River crossing. It was explained that it has been evaluated, and the design and cost information will be sent to Mayor Futch for his review. *Update: Tunnel information was sent to Mayor Futch on 03/23/11.*
- A discussion was held regarding the preparation of the Transportation Corridor Official Map that the local governments are considering adopting. It was explained that this map is separate from the planning work being done currently by NCTA, wherein several alternatives are being developed and



Minutes of March 22, 2011 LOM Meeting

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evaluated. Human and environmental impacts, as well as cost and engineering constraints, are being assessed for all of the alternatives, including the alternative used to develop the Corridor Map. Once preliminary alternatives are chosen from these corridors, more detailed designs will be developed.

The meeting adjourned at approximately 3:00 PM.



MEMORANDUM

To: Project File

From: Joanna Rocco

Date: April 12, 2011

Subject: Minutes of Local Officials Meeting held March 24, 2011 at 2:00 PM
North Carolina Turnpike Authority – Cape Fear Skyway Project
STIP U-4738

Meeting attendees:

Mike Kozlosky – Wilmington Urban Area Metropolitan Planning Organization
Ken O'Grady – City of Wilmington
Lieutenant H.G. Adams – New Hanover County
Stephanie Ayers – North Carolina State Ports Authority
Jennifer MacNeish – New Hanover County
Tony Caudle – City of Wilmington
Walter Futch – Town of Leland
Laura Padgett – City of Wilmington
Sterling Cheatham – City of Wilmington
Allen Pope – North Carolina Department of Transportation
Mike Alford – North Carolina Board of Transportation
Sheila Schult – New Hanover County
Steve DeWitt – North Carolina Turnpike Authority (NCTA)
Jennifer Harris – NCTA
Spencer Franklin – HNTB
John Burris – HNTB
David Griffin – URS
Peter Trencansky – URS
Susan Westberry – URS
Mike Lindgren – URS
Joanna Rocco - URS
Martha Futch



Minutes of March 24, 2011 LOM Meeting

April 12, 2011

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A Local Officials Meeting was held at City Hall in Wilmington, NC on March 24, 2011 at 2pm. Local officials from the study area were sent invitations to the event approximately one month prior to the meeting. The purpose of the meeting was to give local officials a chance to see the materials to be presented to the public at the evening's Citizens Informational Workshop, to be held from 5pm to 8pm at Alderman Elementary School.

Jennifer Harris began the meeting with a review of the presentation to be shown at the evening's workshop. The presentation overviewed the proposed project, the purpose and need, the alternatives study process, schedule, and how the public can comment. The following is a summary of the discussion held after the presentation was given:

- The Mayor of Leland, Walter Futch, asked about the origin of preparation of the Transportation Corridor Official Map that the local governments are considering adopting and why it did not appear until 2009. Mike Kozlosky of the Wilmington Urban Area Metropolitan Planning Organization (WMPO) explained that the WMPO Transportation Advisory Committee (TAC) passed a resolution in 2007 to evaluate alternatives to minimize impacts to Snee Farm and Stoney Creek, and the northern alignment was developed. It was explained that the Transportation Corridor Official Map is separate from the planning work being done currently by NCTA, wherein several alternatives are being developed and evaluated. Human and environmental impacts, as well as cost and engineering constraints, are being assessed for all of the alternatives, including the alternative used to develop the Corridor Map. Once preliminary alternatives are chosen from these corridors, more detailed designs will be developed.
- Laura Padgett inquired about the Shipyard Boulevard terminus on the eastern side of the river in New Hanover County. It was explained that this option was evaluated by the NCTA as well as two crossings that terminated at Independence Boulevard. The current crossing shown on the Transportation Corridor Official Map was chosen due to the least amount of impact.
- Mayor Futch questioned the WMPO's 2035 study that shows the Level of Service (LOS) on existing roads with and without the Cape Fear Skyway project. He noted that the LOS remains low with and without the project. John Burris and Spencer Franklin explained that while LOS does remain low in this study, vehicle miles traveled and vehicle hours traveled decrease, therefore showing a benefit from the project.
- Mayor Futch requested the cost of the planning studies required until 2013.
- Mayor Futch stated that it may be more useful to upgrade US 74/76 and to replace the Cape Fear Memorial Bridge. He noted that only one company upriver from the existing bridge would need 135 feet of clearance.
- Steve DeWitt stressed that the purpose of this study is to look at multiple potential solutions to a transportation problem in the area. The NCTA has no preferred alternative, and there is currently no funding for this project.
- Mayor Futch requested that an alternative further south be evaluated.
- Mayor Futch inquired about a potential tunnel crossing of the Cape Fear River and questioned why a tunnel at the location of the existing Cape Fear Memorial Bridge was not studied.

The meeting adjourned at approximately 3:00 PM.



MEMORANDUM

To: Meeting Attendees

From: Marvin Brown

Date: May 10, 2011

Subject: Minutes of State Historic Preservation Office Meeting held May 3, 2011 at 11:00 AM at the North Carolina Department of Transportation – Cape Fear Skyway Project, STIP U-4738

Meeting attendees:

Renee Gledhill-Earley – North Carolina State Historic Preservation Office
Mary Pope Furr – North Carolina Department of Transportation
Joanna Rocco – URS
Marvin Brown – URS

A historic resources consultation meeting was held at the offices of the Project Development & Environmental Analysis branch of the North Carolina Department of Transportation (NCDOT) on May 3, 2011 at 11 AM. The purpose of the meeting was to determine (1) what the historic Area of Potential Effects (APE) should be for the project and (2) what resources should be further inventoried and assessed at the intensive level and included in a historic architectural survey report. The following is a summary of the meeting.

Ms. Rocco began the meeting by summarizing the status of the project and displaying maps showing the study area and conceptual corridors within that area. Mr. Brown presented a map displaying previously identified cultural resources within the study area. Following discussion of the maps and the conceptual corridors, Ms. Gledhill-Earley and Ms. Furr concurred that the project's historic APE should be that of the study area with one change: it should be bounded at the northeast by 17th Street and Shipyard Boulevard. This APE is depicted on the attached map along with the locations of the 14 resources discussed below and the conceptual corridors being considered.

Mr. Brown displayed images of 14 resources identified on the study area map and briefly discussed their histories. Ms. Gledhill-Earley and Ms. Furr concurred that the Sunset Park Historic District (#1) and the Wilmington Historic District (#14) are listed in the National Register of Historic Places (NR) and that the Goodman House and Doctor's Office (#13) has been determined eligible for NR listing through an official determination of eligibility (DOE), and that these three resources do not require any further inventory. They also concurred that the scattered WWII-era houses mapped as South Wilmington (#5) did not appear to be potentially eligible for NR listing and that they do not require any further inventory. And they concurred that the WWII Prisoner of War Camp site (#7),



Minutes of May 3, 2011 HPO Meeting

May 10, 2011

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the Battle of Forks Road site (#10), and Clarendon Plantation (#12) are archaeological sites and do not require historic architectural inventory.

Ms. Gledhill-Early and Ms. Furr concurred that the following historic architectural resources should be inventoried at the intensive level: Legion Stadium (#2); the Wilmington National Guard Armory (#3); Maffitt Village (#4); J.C. Roe Elementary School (#6); Hanover Heights (#8); Pine Valley Estates (#9); Church (#11); and the Devereux H. Lippitt House at Clarendon Plantation (#12). They further concurred that two additional resources or groups of resources should be inventoried at the intensive level: (1) any intact mid-twentieth-century neighborhoods located south of the Wilmington Historic District, west of 17th Street, north of Shipyard Boulevard and east of US 421; and (2) a potential rice plantation-related historic landscape on the west side of the Cape Fear River including Clarendon Plantation and potentially extending to its north and south. They determined that the inventory of this landscape will require historic architectural and archaeological investigation.

The results of the further inventory will be included in a historic architectural report that will include historic contexts and assessments of all individual resources or groups of resources. The following table summarizes the further inventory required for each resource.

RESOURCE (#)	STATUS/DISPOSITION
Sunset Park Historic District (#1)	NR-listed/ No further inventory necessary
Legion Stadium (#2)	<i>Inventory at intensive level</i>
Wilmington National Guard Armory (#3)	<i>Inventory at intensive level</i>
Maffitt Village (#4)	<i>Inventory at intensive level</i>
South Wilmington (#5)	Does not appear to be potentially eligible for NR listing/ No further inventory necessary
J.C. Roe Elementary School (#6)	<i>Inventory at intensive level</i>
WWII Prisoner of War Camp site (#7)	Archaeological site
Hanover Heights (#8)	<i>Inventory at intensive level</i>
Pine Valley Estates (#9)	<i>Inventory at intensive level</i>
Battle of Forks Road site (#10)	Archaeological site
Church (#11)	<i>Inventory at intensive level</i>
Clarendon Plantation and Devereux H. Lippitt House (#12)	Plantation included as archaeological site on NC Study List/ <i>Inventory Lippitt House at intensive level</i>
Goodman House and Office (#13)	DOE/ No further inventory necessary
Wilmington Historic District (#14)	NR-listed/ No further inventory necessary
Post-WWII Neighborhoods	<i>Inventory at intensive level</i>
Potential Rice Plantation Historic Landscape	<i>Inventory at intensive level</i>

The meeting adjourned at approximately 12:00 PM.

cc: Jennifer Harris – NCTA
David Griffin – URS
Daniel Cassedy – URS



Turnpike Environmental Agency Coordination (TEAC) Meeting

MEETING MINUTES FINAL

Date: May 18, 2011
10:30 A.M. To 12:00 P.M.
NCTA Board Room

Project: STIP U-4738 – Cape Fear Skyway

Attendees:

George Hoops, FHWA
Brad Shaver, USACE
David Wainwright, NCDENR-DWQ
*Fritz Rohde, NMFS
Steve Sollod, NCDOT
Chris Militscher, USEPA
*Jessie Baker – NCDENR-DMF
*Renee Gledhill-Early - SHPO
Tara Murphy, WMPO
*Stephanie Ayers, NCSPA

Lonnie Brooks, NCDOT – Structure Design Unit
Tristram Ford, NCDOT – PDEA-HEU
Mathew Potter, NCDOT – PDEA
Jennifer Harris, NCTA
John Burris, HNTB
Kevin Markham, ESI
David Griffin, URS
Peter Trencansky, URS
*Susan Westberry, URS
Joanna Rocco, URS

**Joined meeting via telephone*

Presentation Materials (Posted on TEAC website):

- Agenda
- Project PowerPoint Presentation
- Draft Alternatives Screening Summary (Tier Three) Handout

Purpose:

The purpose of the meeting was to review comments received from the public at the workshops held in March, the results of the third tier of alternatives screening, and preliminary recommendations for Detailed Study Alternatives (DSAs), and to solicit comments and/or Issues of Concern from Participating and Cooperating Agencies in this regard.

General Discussion:

The following information was discussed at the meeting.

- USACE questioned why a more southern route had not been analyzed that would traverse Old Town. It was explained that the project team has analyzed more southern routes, and it was determined that these alternatives will not likely attract as much traffic (a vehicle miles traveled and vehicle hours traveled analysis was done on a southern route and showed that it attracted about half the traffic volumes than the other alternatives), it is farther away from the Port of Wilmington, and it would traverse Clarendon Plantation (a North Carolina Land Trust property and potential historic resource). SHPO stressed that at this time, no alternatives should be eliminated due to its potential to traverse potential historic properties. It was decided that the Alternatives Development Report would include information about more southern routes and why they were not considered further.

- USACE questioned what the source of the data was for intermittent and perennial streams as shown in the impact table for the alternative options and why they were separated. It was explained that this was based on a state data layer. At the request of USACE and agreed upon by the other agencies, impacts to perennial and intermittent streams will be combined, since distinguishing them is not useful at this time.
- A concern was noted by USEPA as to why minority and low-income impacts were separated in the alternatives screening impact table. It was explained that the US Census separates the data, therefore it is presented separate. It was explained that impacts to minority and low-income populations were calculated based on the amount of displacements within the conceptual design footprint that were within a census block group that has the potential to be either low-income or minority. A census block group is determined to have the potential to be either low-income or minority because the percentage of these demographic groups are below the county threshold. Both sets of information are considered in an environmental justice analysis, and residential and business impacts are combined within these columns. It was decided by the project team that the methodology for calculating these impacts needs to be explained in greater detail in the Alternatives Development Report. Potential low-income and minority impacts will be recalculated so that the potential impacts will not exceed the total number of relocations. It also needs to be clear that the full environmental justice evaluation, per Executive Order 12898, is not being conducted at this time, and will be performed once DSAs have been developed. At this time, the census data is being used as an indicator of potential sensitive populations. The project team asked USEPA for input into what would be the most appropriate way to present the data. No guidance was given by USEPA at the meeting. NCTA will continue to consult with USEPA to determine the most appropriate method for presenting the data.
- NCDWQ requested a detailed summary of the public workshops as is done with other NCDOT projects. NCTA will provide a summary and post to Constructware.
- NCDWQ questioned how impacts were calculated for the 'improve existing' option. It was explained that the third screening summary handout explains the design criteria and shows that an offset from the conceptual design centerline (approximately 300 feet total) was used to calculate impacts.
- A discussion was held about which options were recommended by the project team to be DSAs studied in the Draft Environmental Impact Statement. Those options that terminate at Shipyard Boulevard and begin at US 17 and I-140 (near the Stoney Creek neighborhood) were recommended for elimination from further study by the project team.
 - USACE stated that the Stoney Creek avoidance alternative options "M" and "K" should not be eliminated since they have fewer impacts when compared to other options. Option K could potentially be eliminated since it traverses the planned development within Brunswick Forest. It was agreed that these options would be reevaluated in the process of determining DSAs.
 - USEPA stated concern about options that begin with the segment that begins on I-140 and travels to US 17 due to concerns discovered in the Wilmington Bypass study. It was determined in that study that this area would not be an appropriate terminus for the Wilmington Bypass project because of the high quality wetland system, the Significant Natural Heritage Area of Battle Royal Bay, the Spring Hill community (a documented low-income and/or minority community), and the railroad crossing. It was explained that the function of the Cape Fear Skyway project is different than it was for the Wilmington Bypass, and there would not be a major interchange at I-140 and US 17 as it was proposed for the Wilmington Bypass. It was noted that this option was introduced by the local government (Wilmington Urban Area Metropolitan Planning Organization) and there are local efforts to preserve this corridor. While the corridor preservation process has not been formalized, the study team believed it prudent to include the alternative in the analysis. The study team will take all information available from the Wilmington Bypass study into account while analyzing alternatives for the Cape Fear Skyway project.
 - SHPO stated that there is not enough information to support eliminating any options based on the information presented at today's meeting. USEPA concurred with SHPO. SHPO also noted that if the upgrade existing option was chosen as the preferred

alternative, there will need to be more options other than the northern alignment for use in performing a Section 4(f) evaluation due to impacts to the Wilmington Historic District.

- NCDOT stated that any options that traverse coastal wetlands, notably an approximately five-acre tidal marsh wetland north of the marina where the new location options cross the Cape Fear River (terminating at Independence Boulevard), must be analyzed to avoid and minimize impacts to these resources to the greatest extent practicable.
- WMPO suggested that the options be color-coded in the reports to reduce confusion.
- NMFS stated that their preferred option at this time would be the upgrade existing option. SHPO stated concern with the upgrade existing option because of the historic district in downtown Wilmington that will be impacted.
- USEPA questioned what protected species have occurrences within the alternative options. It was explained that there are three known occurrences of plants: one occurrence of Savanna Indigo-bush and two occurrences of Carolina bishopweed. Both are listed as Federal Species of Concern. Red cockaded woodpecker and shortnose sturgeon also have known occurrences within one mile of the alternative options.
- WMPO requested that Tara Murphy be given permission to access the project's TEAC website on Constructware.
- USFWS and NCWRC representatives were not able to attend the meeting; therefore they will be contacted to determine if they have any additional comments on the information presented.

Action Items:

- NCTA/URS to revise the Alternatives Development Report and present to agencies at an upcoming TEAC meeting.
- NCTA/URS to provide a more detailed summary of the public workshops to the agencies.
- NCTA to add Tara Murphy to list of TEAC members on Constructware.
- NCTA to contact USFWS and NCWRC to determine if they have additional comments.

Resolutions:

- None.

Next Steps:

- The next TEAC meeting for the Cape Fear Skyway is anticipated for September 2011.



MEMORANDUM

To: Meeting Attendees

From: Joanna Rocco

Date: April 16, 2013

Subject: Minutes of Meeting held March 18, 2013 at 1:00 PM
Cape Fear Crossing Project, STIP U-4738
305 Chestnut Street, Wilmington, NC – 4th floor training room

Attendees:

Work Group Members: Laura Padgett-City of Wilmington, Joe Breault-Town of Belville, and Bill Sisson-Town of Wrightsville Beach

Pat Batleman, Town of Leland
Karen Fussell, NCDOT
David Griffin, URS
Jennifer Harris, NCDOT
Mike Kozlosky, WMPO

Tyler Newman, City of Wilmington
Tracy Roberts, HNTB
Joanna Rocco, URS
Susan Westberry, URS

A meeting was held between the Wilmington Urban Area Metropolitan Planning Organization's (WMPO) Transportation Advisory Committee (TAC) Cape Fear Crossing Workgroup and the North Carolina Department of Transportation (NCDOT) on March 18, 2013. The purpose of the meeting was to discuss the subject project and coordination between NCDOT and the WMPO TAC Cape Fear Crossing Workgroup. The workgroup members include Joe Breault of the Town of Belville, Laura Padgett of the City of Wilmington, and Bill Sisson of the Town of Wrightsville Beach.

Laura Padgett called the meeting to order and introductions took place. Ms. Padgett explained that the purpose of the WMPO TAC Cape Fear Crossing Workgroup is to be a liaison between the TAC, the NCDOT, and the Merger Team for the project. She noted the workgroup would be subject to open meeting laws.

NCDOT distributed a notebook at the meeting for the workgroup members. The notebook included the following: a copy of the presentation and agenda (see attached), the *Draft Alternatives Development Report* (September 2011), the *Draft Purpose and Need Statement* (October 2010), public workshop meeting summaries (2006 and 2011), agency meeting minutes, and the Section 6002 Coordination Plan.

Discussion points from the meeting are summarized below:



Minutes of Meeting

March 18, 2013

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- Jennifer Harris confirmed that she will be the main point of contact for the WMPO TAC workgroup. Ms. Harris also clarified that the project is now being managed by NCDOT and not the Turnpike Authority.
- A discussion was held regarding the alternatives to carry forward for the project, and it was explained that most of the alternatives shown in the current draft of the *Alternatives Development Report* (September 2011) are anticipated to be moved forward for detailed study in the environmental impact statement, and this will be confirmed with the environmental resource and regulatory agencies this year.
- Joe Breault stressed concern over whether or not the project was financially viable. Ms. Harris explained that cost will be one of several factors used for alternatives analysis. The main focus is finding the most practicable transportation solution and that could be an upgrade to the existing transportation system, a project on new location or a hybrid of the two.
- Bill Sisson noted that the project planning should not only be focused on the crossing of the river, but impacts and needed improvements to the area's infrastructure.
- Joanna Rocco gave a presentation that explained a brief history of the project, reviewed the defined project needs and project purpose, the technical analyses that have been done up to this point, how the project will go through project development via the National Environmental Policy Act (NEPA) process, and steps/analyses needed to move forward to get the Record of Decision (ROD) for the project. She also reviewed the NEPA/Section 404 Merger Process and how the project will be brought into that process. See attached for presentation.
- Bill Sisson requested that WMPO be informed if there are any changes in the project team members, including NCDOT and consultants.
- Ms. Padgett noted that there has been miscommunication in the past between the WMPO and NCDOT, and that the WMPO needs to be involved in this project as much as possible. The WMPO must get data and impact tables as new information comes available. Ms. Harris noted that the process needs to be transparent and look at a full range of options that address the project needs and purpose. The process is data driven and no alternative has been pre-determined. NCDOT will forward the WMPO an alternative map showing all of the initial options considered.
- A discussion was held regarding the type of bridge that would be feasible across the Cape Fear River for this project. Ms. Padgett noted that it is crucial to propose the right size of bridge in order to justify expenditures. The WMPO requested information on the number of openings of the Cape Fear Memorial Bridge, the type and size of vessels utilizing the river, and what businesses would need vessels to travel upstream north of the Cape Fear Memorial Bridge. This information has been captured in the 2009 *Bridge Location and Type Study* prepared by URS, but updates to these data may be necessary. NCDOT and URS will attend the next TAC workgroup meeting, scheduled for May 13, 2013, and give a presentation on the material presented in the study. Any updated information that has been received regarding vessel activity and bridge costs/clearances will be presented as



Minutes of Meeting

March 18, 2013

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well, which might include preliminary vessel surveys obtained from the United States Coast Guard, and Cape Fear Memorial Bridge opening information obtained from NCDOT.

- There was agreement to change the name of the project from the Cape Fear Skyway to the Cape Fear Crossing.
- It was decided that the WMPO TAC Cape Fear Crossing Workgroup should meet on a quarterly basis. Ms. Padgett noted it would be beneficial to meet before the next planned Merger Team meeting. The next workgroup meeting is currently scheduled for Monday, May 13th at 1pm in the same location, 305 Chestnut Street.

The meeting was adjourned at 3:10 pm.



Cape Fear Crossing

STIP U-4738

Brunswick and New Hanover Counties

AGENDA

March 18, 2013

1:00 PM

Cape Fear Crossing Work Group – WMPO TAC
305 Chestnut Street, Wilmington, NC


- Introduction & Cape Fear Crossing Work Group Discussion – Mike Kozlosky, WMPO
 - Objectives
 - Members
 - Organization/Approach
 - Meeting Schedule
- Project Introduction – Jennifer Harris, NCDOT
- Cape Fear Crossing Presentation – Joanna Rocco, URS Corporation
 - Project History, Status, & the NEPA Process
 - Purpose and Need
 - Alternatives Development
 - Affected Environment & Environmental Consequences
 - Agency/Stakeholder Involvement
 - Next Steps & Project Schedule
 - Project Challenges
- Discussion





Cape Fear Crossing

WMPO TAC Workgroup Meeting





March 18, 2013

STIP Project No. U-4738
Federal Aid Project No. STP-0017(53)
WBS No. 40114
New Hanover and Brunswick Counties, North Carolina






CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC







Agenda



- ❖ Project History, Status, & the NEPA Process
- ❖ Purpose and Need
- ❖ Alternatives Development
- ❖ Affected Environment & Environmental Consequences
- ❖ Agency/Stakeholder Involvement
- ❖ Next Steps & Project Schedule
- ❖ Project Challenges



CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC



Project Study Area

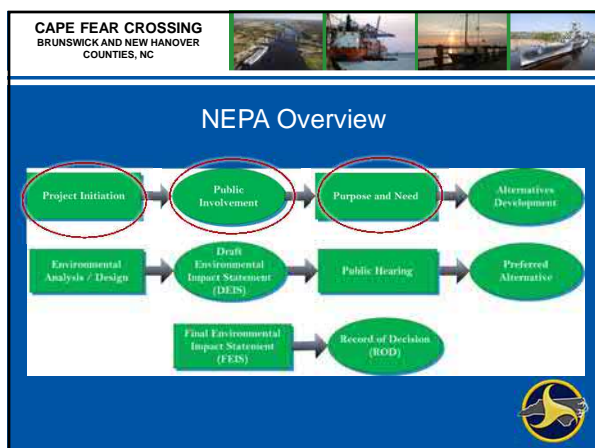





CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC

Project Status

- ❖ **National Environmental Policy Act of 1969:**
 - Requires disclosure of environmental impacts (EIS / EA) when a major federal action is taken (e.g., FHWA funding, federal permit)
 - Identification of project purpose and need
 - Identification of range of reasonable alternatives
 - Affected environment & environmental consequences
 - Public notices and opportunity for public hearing and comment
 - Levels of NEPA – CE, EA, EIS
 - Project will require Environmental Impact Statement (EIS)
- ❖ **Technical Documentation**




CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC




Project Status

❖ **Technical Documents ongoing or completed**



- 6002 Coordination Plan
- Purpose and Need
- Alternatives Development
- Traffic (forecast, safety, capacity analysis)
- Bridge Location Study
- Cultural Resources
- Natural Resources Inventory Report
- Hurricane Evacuation Report
- Conceptual Designs
- Threatened and Endangered Species Report




CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC




NEPA Overview



CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC



Purpose and Need Overview



CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC

Purpose and Need

The needs for the project include:

- ❖ Traffic Capacity Deficiencies
- ❖ Inconsistency with Regional Transportation Corridor Vision
- ❖ Inadequate Access to Port of Wilmington

CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC

Purpose and Need

The purpose of the project is to:

- ❖ Improve traffic flow and enhance freight movements beginning in the vicinity of US 17 and future I-140 in Brunswick County across the Cape Fear River to US 421 near the Port of Wilmington in New Hanover County.

Secondary benefits of the project would be to meet goals of Strategic Highway Corridor, NC Intrastate System, and WMPO LRTP, and provide reduced hurricane evacuation time.

CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC

NEPA Overview

Project Initiation

Public Involvement

Purpose and Need

Alternatives Development

Environmental Analysis / Design

Draft Environmental Impact Statement (DEIS)

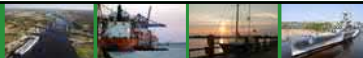
Public Hearing

Preferred Alternative


Final Environmental Impact Statement (FEIS)

Record of Decision (ROD)

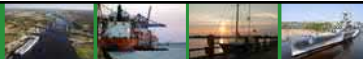
CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC



Alternatives Development Overview




CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC



Alternatives Development Screening Process

- ❖ Three step screening process
 - Step 1: Screen against purpose and need
 - Step 2: High level corridor screening
 - Step 3: Conceptual design screening
- ❖ Identification of Detailed Study Alternatives (DSAs)



CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC




Alternatives Development - First Screening

- ❖ Preliminary alternative concepts evaluated:
 - No-Build
 - Transportation Demand Management
 - Transportation Systems Management
 - Mass Transit/Multi-Modal
 - Improvements to Existing Roadways
 - New Location Roadways
 - Hybrids of New Location Roadways and Existing Roadway Improvements




CAPE FEAR CROSSING
 BRUNSWICK AND NEW HANOVER
 COUNTIES, NC



First Screening Results


Alternative	Improve Traffic Flow and Enhance Freight Movement	Improve Connectivity between US 17 and the Port of Wilmington	Provide Facility Consistent with Vision of the SHC and NC Intrastate System
No-Build	✗	✗	✗
Transportation Demand Management	✗	✗	✗
Transportation System Management	✗	✗	✗
Mass Transit/Multi-Modal	✗	✗	✗
Improve Existing US 17 (Widening Arterial) (Freeway)	✓	✓	✗
New Location Highway	✓	✓	✓
New Location/Improve Existing Roadway Hybrids	✓	✓	✓

CAPE FEAR CROSSING
 BRUNSWICK AND NEW HANOVER
 COUNTIES, NC



Alternatives Development – Second Screening

- ❖ High level corridor screening
- ❖ Utilized GIS features to calculate impacts within 500-foot corridors



CAPE FEAR CROSSING
 BRUNSWICK AND NEW HANOVER
 COUNTIES, NC



High-Level Corridor Screening




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Alternatives Development – Third Screening

- ❖ Create conceptual designs and calculate impacts
- ❖ Analyze each preliminary corridor using performance measures such as network speed analysis – Vehicle Miles Traveled (VMT) / Vehicle Hours Traveled (VHT)
- ❖ Analyze river crossing options - tunnel, option to replace existing bridge, bridge vertical/horizontal clearances, etc.

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Proposed Alternative Corridors

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NEPA Overview

```

graph LR
    A[Project Initiation] --> B[Public Involvement]
    B --> C[Purpose and Need]
    C --> D[Alternatives Development]
    D --> E[Environmental Analysis / Design]
    E --> F[Draft Environmental Impact Statement (DEIS)]
    F --> G[Public Hearing]
    G --> H[Preferred Alternative]
    H --> I[Final Environmental Impact Statement (FEIS)]
    I --> J[Record of Decision (ROD)]
        
```

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Affected Environment and Environmental Consequences Overview

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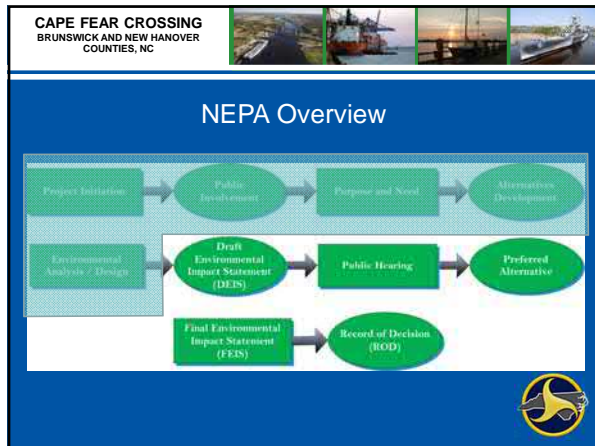
Impact Analysis & Technical Documentation

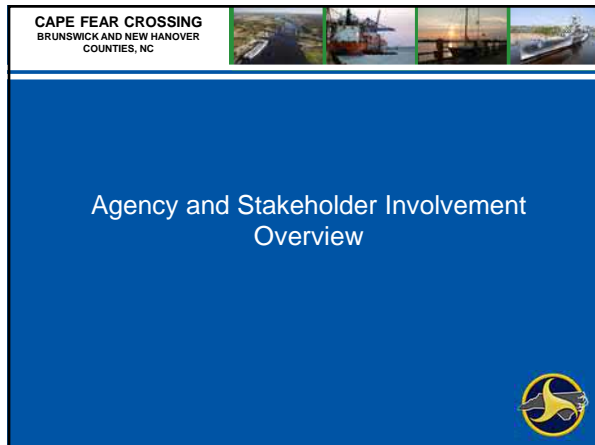
- ❖ Traffic Forecasting
- ❖ Traffic Capacity Analysis
- ❖ Cost Estimates
- ❖ Community Impact Assessment - socioeconomic, relocations, bicycle and pedestrian, farmland, access, environmental justice populations, etc.
- ❖ Indirect and Cumulative Effects
- ❖ Cultural Resources - architectural history and archaeology
- ❖ Hydraulics

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Impact Analysis & Technical Documentation


- ❖ Natural Resources - wetland, streams, water quality, terrestrial and aquatic wildlife, floodplains, coastal zones, protected species
- ❖ Maritime/Shipping Channel Considerations
- ❖ Noise Analysis
- ❖ Air Quality Analysis
- ❖ Hazardous Materials
- ❖ Visual Impact Analysis
- ❖ Utilities
- ❖ Construction Impacts








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Participating Agencies and Other Stakeholders

- ❖ NC Department of Environment and Natural Resources (NCDENR) – DCM, DMF, DWQ, WRC
 - Division of Coastal Management
 - Division of Marine Fisheries
 - Division of Water Quality
 - Wildlife Resources Commission
- ❖ NC State Ports Authority (NCSPA)




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Participating Agencies and Other Stakeholders

- ❖ Cape Fear Rural Planning Organization
- ❖ Wilmington Urban Area Metropolitan Planning Organization (WMPO)
- ❖ Neighborhoods/HOAs (e.g. Snee Farm, Brunswick Forest)



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Public Involvement

- ❖ April 2006 workshops
 - Introduce the project
- ❖ March 2011 workshops
 - Purpose and Need, Preliminary Corridor recommendations
- ❖ Next round of public outreach
 - Re-introduce project
 - Preliminary DSAs



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Next Steps and Project Schedule Overview

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Next Steps (short-term)


- ❖ Meet with regulatory and environmental resource agencies to review/confirm:
 - Purpose and Need
 - Alternatives Development
- ❖ Public outreach
- ❖ Identify Detailed Study Alternatives (DSAs)
- ❖ Screening ICE
- ❖ Initiate natural resources field investigations

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Next Steps


- ❖ Technical Documents and Environmental Analysis
- ❖ DEIS
- ❖ Public hearing
- ❖ Preferred alternative
- ❖ Avoidance and Minimization
- ❖ FEIS
- ❖ ROD

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Next Steps (Post NEPA)

- ❖ Final Design
- ❖ Financing
- ❖ Public Involvement
- ❖ ROW Plans
- ❖ ROW Acquisition
- ❖ Permitting
- ❖ Construction



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Project Schedule – under development

- ❖ DEIS – Summer 2015
- ❖ FEIS – Spring 2016
- ❖ ROD – Fall 2016




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Project Challenges




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Project Challenges

- ❖ Growth of New Hanover and Brunswick Counties
- ❖ Environmental resources
- ❖ Identifying the optimal transportation solution that has consensus support
- ❖ Funding





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Questions?

www.ncdot.gov/projects/capefearskyway
capefear@ncdot.gov
1-800-233-6315





MEMORANDUM

To: Meeting Attendees

From: Joanna Rocco

Date: June 7, 2013

Subject: Minutes of Meeting held May 13, 2013 at 1:00 PM
Cape Fear Crossing Project, STIP U-4738
305 Chestnut Street, Wilmington, NC – 4th floor training room

Attendees:

Work Group Members: Laura Padgett-City of Wilmington and Bill Sisson-Town of Wrightsville Beach (member Joe Breault-Town of Belville, was not present)

Pat Batleman, Town of Leland
Karen Fussell, NCDOT
David Griffin, URS
Jennifer Harris, NCDOT
Mike Kozlosky, WMPO

Patrick Riddle, NCDOT
Tracy Roberts, HNTB
Joanna Rocco, URS
Susan Westberry, URS

The second meeting of the Wilmington Urban Area Metropolitan Planning Organization's (WMPO) Transportation Advisory Committee (TAC) Cape Fear Crossing Workgroup was held on May 13, 2013. The purpose of the meeting was to discuss the subject project, project updates, and previous work by NCDOT on the bridge types and locations for crossing the Cape Fear River. The workgroup members include Joe Breault of the Town of Belville, Laura Padgett of the City of Wilmington, and Bill Sisson of the Town of Wrightsville Beach.

Bill Sisson called the meeting to order. Workgroup members were provided with an agenda, the final minutes from the previous workgroup meeting held on 3/18/13, and a copy of the meeting's presentation.

Mike Kozlosky continued by beginning a discussion of the alignment proposed by the Town of Leland in a 3/21/13 resolution that would expand the study area south of Town Creek and end at US 17 near Bell Swamp. The WMPO adopted the resolution at their 3/24/13 TAC meeting. Jennifer Harris explained that the alignment proposed by the Town of Leland will be presented to the environmental and regulatory agencies and they must approve the expanded study area. A discussion was held regarding the implications of adding this additional alternative considering it could affect schedule and cost, because additional studies would need to be prepared. The agencies would also need to approve the decision to move the alternative



Minutes of Meeting

June 7, 2013

Page 2

forward as a Detailed Study Alternative (DSA) if the project team determines it should be moved forward as a DSA after the alternatives screening process.

Joanna Rocco showed an alignment prepared by URS that attempted to depict the Town's vision for the alignment based on a drawing prepared by David Hollis, Leland's town manager. The drawing provided by the Town shows the alignment crossing the Duke Energy Progress dual transmission line. URS had prepared a second alignment just north of the Town's proposed alignment that would avoid crossing the Duke Energy Progress dual transmission line across the Cape Fear River. Pat Batleman of the Town of Leland stated that neither alignment depicted the Town's vision and requested that URS and NCDOT coordinate with David Hollis. Pat Batleman also noted that the purpose of this southern alignment proposed by the Town was to avoid going through the Town of Leland with the project.

Joanna Rocco then gave a presentation on the project status and the *Preliminary Bridge Location and Type Study* (URS, 2009). The purpose of the study was to evaluate potential crossing locations of the Cape Fear River for any potential new location options south of the Port of Wilmington. The study was not meant to limit the evaluation of other alternatives that are not new location build alternatives. See attached for presentation.

Additional discussion points from the meeting are summarized below:

- Bill Sisson inquired whether or not mass transit lanes on a bridge over the Cape Fear River (whether upgrade existing or new location) would be considered for the project. It was noted that at this time additional lanes for buses had not been considered. It was explained that a mass transit alternative was screened in the Draft Alternatives Development Report; however, it did not meet the project purpose and need and was not carried forward for additional analysis. Accommodations for mass transit could be reconsidered if the WMPO has additional information on a specific mass transit opportunities and/or plans.
- It was noted that the WMPO had passed a resolution on September 29, 2010 requesting the NCDOT consider bicycle and pedestrian accommodations for the project.
- Laura Padgett noted that a vertical restriction on a new bridge at the existing Cape Fear Memorial Bridge location could potentially restrict economic growth north of the bridge along the Cape Fear River. David Griffin noted that there is a constraint due to the width and depth of the navigational channel at this location as well.
- Laura Padgett asked about the advantages of an extradosed prestressed bridge type. This wasn't immediately known but would be researched. *According to URS bridge engineers, an extradosed prestressed bridge is very similar to a cable-stay bridge. The tower of a typical cable-stay bridge has a height above the deck at least half the length to the next support, since the cables are the vertical support and must come at a relatively high angle. In an extradosed bridge, the cables intersect with the deck further out, and at a lower angle, so that their tension acts more to compress the bridge deck horizontally than to support it vertically. Extradosed bridges are relatively expensive, and most spans that could be bridged by an extradosed bridge could be spanned more inexpensively with a cable-stayed bridge.*



Minutes of Meeting

June 7, 2013

Page 3

- David Griffin noted that a tunnel option had been developed for crossing the Cape Fear River at the “central” location (the bridge study analyzed a north, central, and south crossing) at Independence Boulevard. The cost of a tunnel could potentially be almost double the cost of a bridge, with just as many impacts to the human and natural environments.
- The Wilmington/Cape Fear Coast Convention and Visitor’s Bureau is now called the New Hanover Tourism Development Authority.
- NCDOT will soon be sending letters to notify property owners that field staff will be in the area to complete natural resources field work. Mike Kozlosky requested the NCDOT notify him when letters will be mailed. Bill Sisson noted to be very specific about the naming convention for the project, and to be clear to property owners that this is formerly the Cape Fear Skyway project.
- Bill Sisson asked if the new funding formula proposed by the governor and currently being considered by the legislature would affect the Cape Fear Crossing project. Jennifer Harris responded that based on the current status of the bills in the General Assembly, the project would be subject to the new funding formula, but this would not delay completing the environmental study process (i.e. the ROD).
- A schedule presented by NCDOT has the Record of Decision (ROD) being completed by Winter 2017. Laura Padgett stated that she was under the impression that the schedule provided by Jim Trogon earlier this year was the final schedule (Note: Mr. Trogon’s February 1, 2013 letter to WMPO showed an estimated ROD date of late 2016). Jennifer Harris explained that this was due to the schedule being developed in much more detail since Mr. Trogon’s letter with consideration of the numerous technical documents and substantial design work to be completed. Bill Sisson noted that he is supportive of a realistic schedule. NCDOT will take every opportunity to compress the schedule where feasible. It was reiterated that the addition of the Town of Leland’s proposed southern alignment could have an impact to the project schedule.
- URS will initiate coordination with David Hollis, Leland’s Town Manager, to finalize a conceptual design for the Town of Leland’s proposed alignment.
- The next Cape Fear Crossing Workgroup meeting is to be held June 24, 2013 at 1pm in the same location. Mike Kozlosky will notify workgroup members and send a meeting invite.

The meeting was adjourned at 3:05 pm.



Cape Fear Crossing

STIP U-4738

Brunswick and New Hanover Counties

AGENDA

May 13, 2013

1:00 PM

Cape Fear Crossing Work Group – WMPO TAC
305 Chestnut Street, Wilmington, NC

- Introduction – Mike Kozlosky, WMPO
- Study Area Boundary Expansion Resolution and Discussion – Mike Kozlosky, WMPO
- Cape Fear Crossing Presentation – Joanna Rocco, URS Corporation
 - Project Status
 - Bridge Type and Location Study Review
 - Data Collection Updates
 - Next Steps & Project Schedule
 - June 2013 Merger Meeting Review
- Discussion


Cape Fear Crossing

WMPO TAC Workgroup Meeting


May 13, 2013

STIP Project No. U-4738
Federal Aid Project No. STP-0017(53)
WBS No. 40114
New Hanover and Brunswick Counties, North Carolina






CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
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Agenda

- ❖ Project Status
- ❖ Bridge Type and Location Study
- ❖ Cape Fear Memorial Bridge Crossing Location
- ❖ Data Collection Updates
- ❖ Next Steps & Project Schedule
- ❖ June 2013 Merger Meeting Review




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Project Status

- ❖ Scoping upcoming tasks
 - Natural resources
 - Screening ICE
 - Cultural resources
- ❖ Citizen and other stakeholder coordination
- ❖ Coordination with US Coast Guard
- ❖ Coordination with regulatory and environmental resource agencies
- ❖ Traffic forecasting





CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
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Bridge Study Purpose

- ❖ Report dated March 2009
- ❖ Determine appropriate bridge type & size
- ❖ Better cost estimating
- ❖ Better planning for technical studies
- ❖ May accelerate final design timeline




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Bridge Study Overview


- ❖ River crossing location options for new location alternatives
- ❖ Navigational requirements
- ❖ Summary of coordination efforts
- ❖ Comparative analysis of river crossing options




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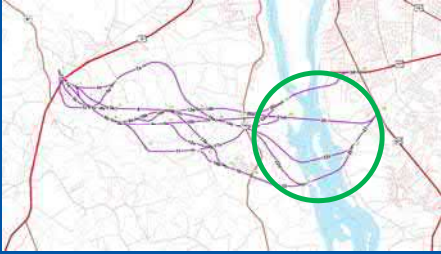
RIVER CROSSING LOCATION OPTIONS




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Alternatives Screening




Preliminary Set of Alternative Corridors




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Alternatives Screening




Alternative Corridors - Post Screening




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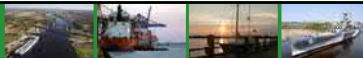
Alternatives Screening



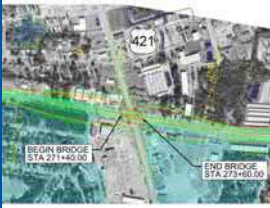
Alternative Corridors - NC 133 to US 421




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US 421 Interchange Concepts - North



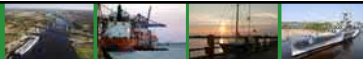


Single Point
Urban Interchange

Partial Clover



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US 421 Interchange Concepts - Central






Single Point
Urban Interchange

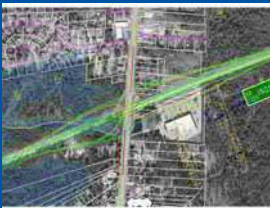
Partial Clover

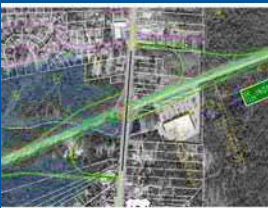


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US 421 Interchange Concepts - South





Single Point
Urban Interchange

Partial Clover



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NAVIGATIONAL REQUIREMENTS

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Navigational Requirements

- ❖ Existing conditions at Port of Wilmington
- ❖ Vessel characteristics
 - Present and near-term merchant vessels
 - Long-term trends in cruise ships, containers, bulk carriers, and military vessels
- ❖ Economic impacts of Port
- ❖ Future use at Port
 - Future plans
 - Future vessels and size
 - Restrictions from Progress Energy power lines

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River Crossing Constraints - Navigational

Vertical Clearance Requirements
Downstream Duke Energy Powerline - ~165' Vertical Clearance

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Navigational Requirements cont.

- ❖ Bridge structure options
 - Structure types
 - Movable span structures
 - Fixed span structures
 - Structure cost



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Bridge Types – Movable Span



Lift Span
Cape Fear Memorial Bridge over Cape Fear River, Wilmington, NC




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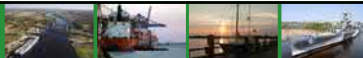
Bridge Types – Movable Span




Bascule
Woodrow Wilson Bridge over Potomac River, Alexandria, VA




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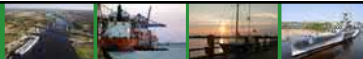
Bridge Types – Movable Span



Swing Span
George P. Coleman Bridge over York River, Yorktown, VA




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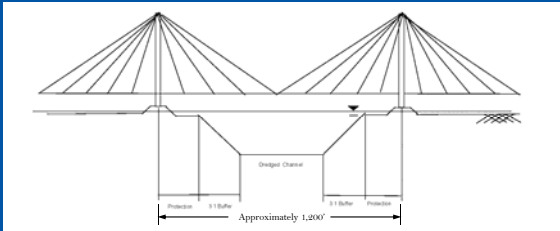
Distances Used to Determine Span Lengths

Corridor	Channel Width (feet)	Water's Edge to Water's Edge (feet)	Land to Land (feet)
North Corridor	784	3,200	8,200
Central Corridor	789	3,475	12,500
South Corridor	684	7,050	8,000




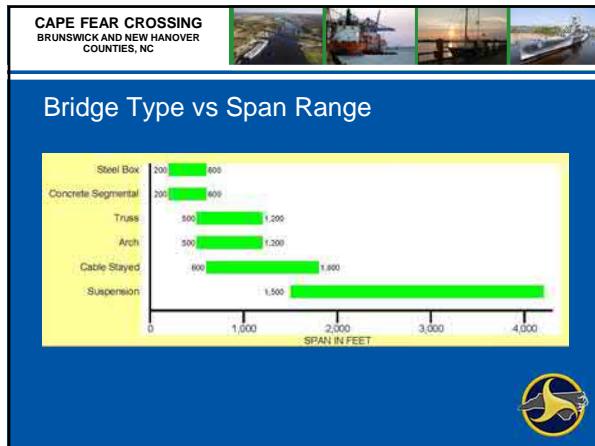
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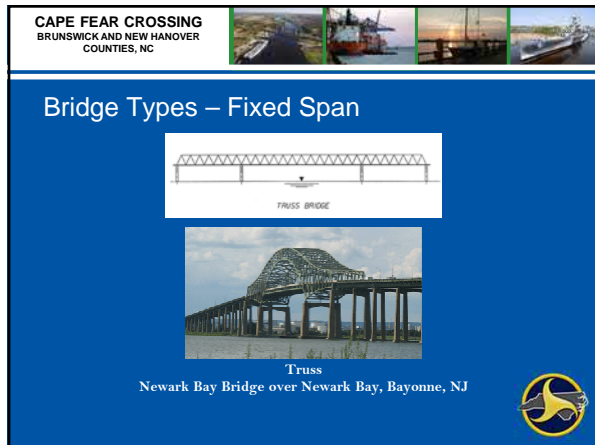


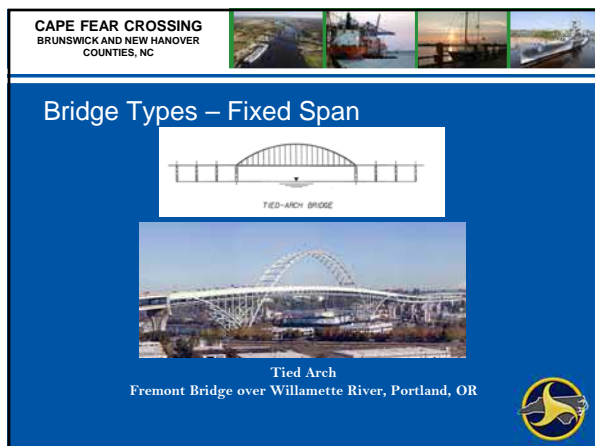


Horizontal Clearance Requirements
Minimum span required = 750 to 850 feet
Minimum span recommended = 1,200 feet









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Bridge Types – Fixed Span

CABLE STAYED BRIDGE

Cable Stayed
Sunshine Skyway Bridge over Tampa Bay, Tampa, FL

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Bridge Types – Fixed Span

EXTRADOSED - PRESTRESSED BRIDGE

Extradosed Prestressed
North Arm Bridge over Fraser River, Vancouver

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Navigational Requirements cont.

- ❖ Bridge cost
 - Cable-stayed bridge
 - Main crossing = 2,400 feet (main span 1,200 feet)
 - Engineering News Record (ENR) construction cost index

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SUMMARY OF COORDINATION
EFFORTS



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Summary of Coordination Efforts

- ❖ North Carolina State Ports Authority
- ❖ US Army Corps of Engineers
- ❖ US Coast Guard
- ❖ Progress Energy
- ❖ Wilmington/Cape Fear Coast Convention and Visitors Bureau
- ❖ Local, Regional, & International Shipping Companies
- ❖ Cruise Lines
- ❖ Cape Fear River Pilots Association




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COMPARATIVE ANALYSIS OF RIVER
CROSSING OPTIONS



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Comparative Analysis of River Crossing Options

❖ Evaluation Criteria


- Traffic/Planning
- Engineering
- Environmental Considerations

❖ River Crossing Options


- North
- Central
- South




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River Crossing Constraints - Environmental





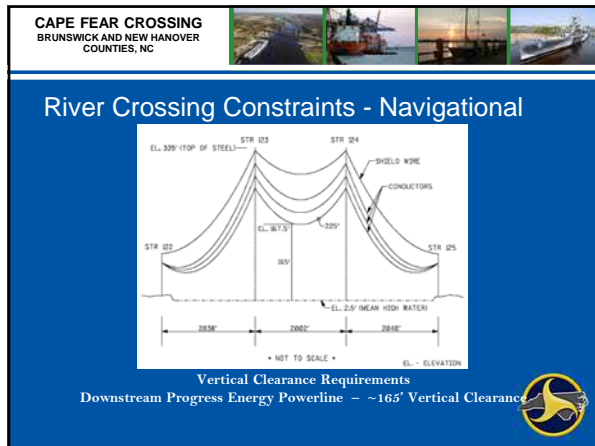
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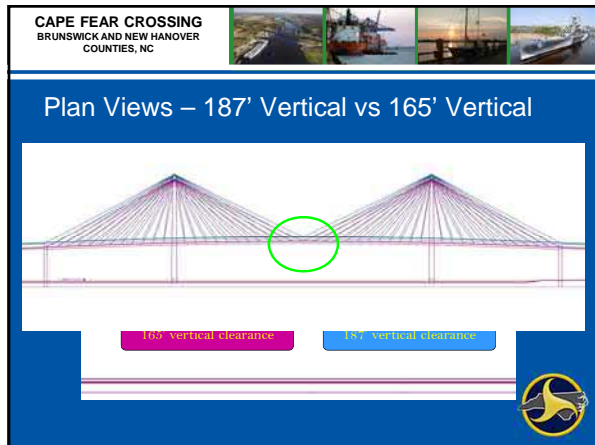


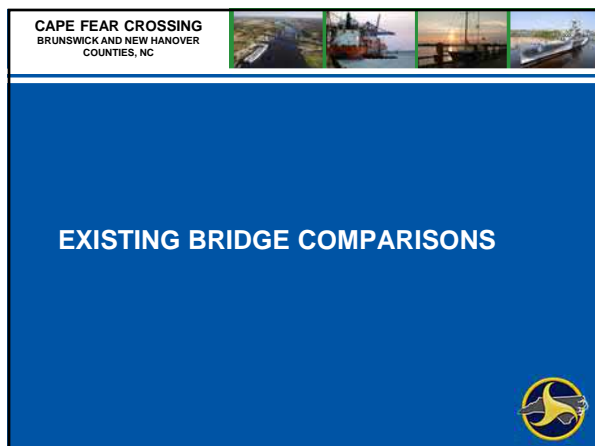
River Crossing Constraints - Cultural



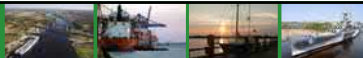










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I-140 Wilmington Bypass Bridge Comparison



Cape Fear Skyway Bridge	I-140 Bridge
Main Span Length: 1,200'	Main Span Length: ~500'
Vertical Clearance: 187'	Vertical Clearance: ~65'



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Cape Fear Memorial Bridge Comparison




Cape Fear Skyway Bridge	Cape Fear Memorial Bridge
Main Span Length: 1,200'	Main Span Length: ~350'
Vertical Clearance: 187'	Vertical Clearance: ~135' lifted




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I-295 James River Bridge Comparison



Cape Fear Skyway Bridge	James River Bridge
Main Span Length: 1,202'	Main Span Length: ~630'
Vertical Clearance: 187'	Vertical Clearance: ~150'
	Note Harp Design



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Cooper River Bridge Comparison


Cape Fear Skyway Bridge	Cooper River Bridge
Main Span Length: 1,200'	Main Span Length: ~1,550'
Vertical Clearance: 187'	Vertical Clearance: ~187'




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CAPE FEAR MEMORIAL BRIDGE CROSSING LOCATION



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River Crossing Constraints - Navigational




Vertical Clearance Requirements
Upstream Cape Fear Memorial Bridge - ~135' Vertical Clearance



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Upgrade Existing US 17 Study

- ❖ Developed options for crossing Cape Fear River within vicinity of existing Cape Fear Memorial Bridge – A, B, & C
- ❖ Impacts resulting from each crossing option including cost

[illegible][illegible]

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DATA COLLECTION UPDATES



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Data Collection Updates


- ❖ Cape Fear Memorial Bridge opening data
 - Original bridge log data from 2008
 - Used for Purpose & Need Statement to justify traffic capacity deficiencies (delays to traffic from openings)
 - Updated data received from 2012 openings
- ❖ US Coast Guard public notice and vessel survey
 - Will be used to obtain size of vessels and origin/destinations



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NEXT STEPS & PROJECT SCHEDULE



CAPE FEAR CROSSING
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Next Steps (short-term)

- ❖ Meet with regulatory and environmental resource agencies
- ❖ Public outreach
- ❖ Identify Detailed Study Alternatives (DSAs)
- ❖ Screening ICE
- ❖ Initiate natural resources field investigations
- ❖ Traffic forecasting

CAPE FEAR CROSSING
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Next Steps

- ❖ Technical Documents and Environmental Analysis
- ❖ DEIS
- ❖ Public hearing
- ❖ Preferred alternative
- ❖ Avoidance and Minimization
- ❖ FEIS
- ❖ ROD

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Next Steps (Post NEPA)

- ❖ Final Design
- ❖ Financing
- ❖ Public Involvement
- ❖ ROW Plans
- ❖ ROW Acquisition
- ❖ Permitting
- ❖ Construction

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Project Schedule

- ❖ DEIS – Spring 2016
- ❖ FEIS – Summer 2017
- ❖ ROD – Winter 2017

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JUNE 2013 MERGER MEETING REVIEW

CAPE FEAR CROSSING
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June 2013 Merger Meeting Review


- ❖ Discussion of insertion of project into the Merger Process
- ❖ Concurrence Point 1 – Purpose & Need & Study Area
- ❖ Concurrence Point 2 – Detailed Study Alternatives to Carry Forward

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Purpose and Need

The needs for the project include:

- ❖ Traffic Capacity Deficiencies
- ❖ Inconsistency with Regional Transportation Corridor Vision
- ❖ Inadequate Access to Port of Wilmington




CAPE FEAR CROSSING
 BRUNSWICK AND NEW HANOVER
 COUNTIES, NC

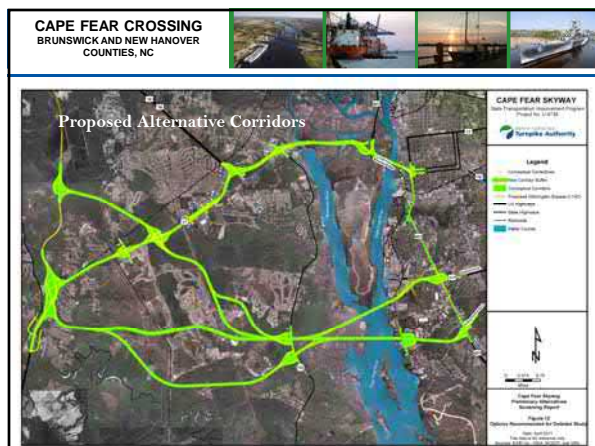
Purpose and Need

The purpose of the project is to:


- ❖ Improve traffic flow and enhance freight movements beginning in the vicinity of US 17 and future I-140 in Brunswick County across the Cape Fear River to US 421 near the Port of Wilmington in New Hanover County.

Secondary benefits of the project would be to meet goals of Strategic Highway Corridor, NC Intrastate System, and WMPO LRTP, and provide reduced hurricane evacuation time.







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Questions?

www.ncdot.gov/projects/capefearsyway
capefear@ncdot.gov
1-800-233-6315





Cape Fear Crossing

STIP U-4738

Brunswick and New Hanover Counties

MEETING MINUTES

Date: June 13, 2013
9:30 A.M. To 11:45 A.M.
NCDOT Century Center, Building A - Structure Design Conference Room

Project: STIP U-4738 – Cape Fear Skyway

Attendees:

Ron Lucas, FHWA
Clarence Coleman, FHWA
Brad Shaver, USACE
Gary Jordan, USFWS
Mason Herndon, NCDENR-DWQ
*Pace Wilber, NMFS
Steve Sollod, NCDOT
*Chris Militscher, USEPA
Travis Wilson, NCWRC
*Jessi Baker, NCDENR-DMF
Renee Gledhill-Earley, SHPO
Mike Kozlosky, WMPO
*Stephanie Ayers, NCSPA
Pat Batleman, Town of Leland
Allen Pope, NCDOT – Statewide Logistics
*Karen Fussell, NCDOT – Division 3
Patrick Riddle, NCDOT – Division 3
Greg Thorpe, NCDOT – PDEA
Chris Rivenbark, NCDOT – PDEA

Jennifer Harris, NCDOT – PDEA
Paul Atkinson, NCDOT – Hydraulics Unit
Gary Lovering, NCDOT – Roadway Design Unit
Dayton Martin, NCDOT – Utilities Unit
Herman Huang, NCDOT – Community Studies
Adam Snipes, NCDOT – TIP
Benjetta Johnson, NCDOT – Mobility and Safety
Elizabeth Lusk, NCDOT – NES
Phil Harris, NCDOT – NES
Mark Staley, NCDOT – REU
Nora McCann, NCDOT – TPB
Kevin Fischer, NCDOT – Structures Management
Tracy Roberts, HNTB
David Griffin, URS
Ed Edens, URS
Joanna Rocco, URS
*Susan Westberry, URS

**Joined meeting via telephone*

Presentation Materials:

- Agenda
- Project PowerPoint Presentation
- Purpose and Need Statement (final draft, May 2013)
- Concurrence Point 1 Packet
- Draft Concurrence Point 2 Packet

Purpose:

The purpose of the meeting was to review the Purpose and Need Statement and Project Study Area with the merger team to achieve Concurrence Point 1. The project team also reviewed the Draft Concurrence Point 2 information including the methodology for screening alternatives and the preliminary alternatives that will be recommended as Detailed Study Alternatives (DSAs).

Discussion:

The following information was discussed at the meeting.

General

- USACE accepted Cooperating Agency status when the project was under the Section 6002 Coordination Plan and wanted to know if this needed to be renewed via a letter now that the project is in the Section 404/NEPA Merger Process. FHWA noted that this was not necessary.
- NCDOT inquired whether the traffic forecast included the Wilmington Bypass. NCDOT explained that it was included because it is in the WMPO Long Range Transportation Plan. The traffic forecast is currently being updated.

Purpose and Need and Study Area Defined – CP 1

- USEPA questioned why “Inconsistency with Regional Transportation Corridor Vision” is considered a need for the project and not part of the purpose. It was explained that the team had previously agreed to remove this information from the purpose statement and consider it as a secondary benefit only so that alternatives would not be screened against it. It was agreed that this information should now be removed as part of the project need but could be retained as a secondary benefit. The project need now includes only “Traffic Capacity Deficiencies” and “Improved Access to the Port of Wilmington” as its primary needs. The Purpose and Need Statement will be updated to reflect this.
- USEPA inquired whether or not alternatives will be evaluated based on the hurricane evacuation analysis. URS stated that a hurricane evacuation study will be done for all detailed study alternatives.
- USEPA noted that the discussion in the Purpose and Need Statement regarding air draft clearances for vessels traveling in the Cape Fear River is irrelevant to the need for the project. It was agreed that this information could be removed from the portion of the report that discusses need, and instead only included in a later part of the report that discusses navigational requirements at the Port of Wilmington.
- USEPA noted that there needed to be coordination between NCDOT and the North Carolina State Ports Authority regarding future rail plans and how they might affect the roadway network. SHPO also asked for clarification regarding the freight component of the purpose statement. NCDOT noted it will be clarified in the discussion within the Purpose and Need document that “freight movement” is meant to include the roadway component.
- A discussion was held regarding the request by the WMPO to expand the study area to south of Town Creek to fulfill the request by the Town of Leland to study additional alternatives within this area. WMPO explained that the Town of Leland did not want their town bisected by the project and has requested that alternatives be considered that would avoid impacting their town limits.
 - USEPA questioned why the Town was not able to incorporate the project into the Town’s future land use plans.

- USEPA noted that the alignment is further south of the port and also adds an additional 25 percent of area to the study area. *It should be noted that the original study area with the bulbout on the western end to encompass service roads is 41,061 acres or 64.2 square miles, with the expanded study area resulting in an additional 11,459 acres or 17.9 square miles. Therefore, the expanded study area totals 52,520 acres or 82.1 square miles, which is an approximate increase of 28 percent.*
- USACE noted that there are sensitive resources in this area including easements held in conservation by the North Carolina Coastal Land Trust, and it had been previously determined that a location this far south would not attract traffic.
- NCDOT noted that they are aware of these issues, and any additional alignments in this expanded portion of the study area would be screened against the purpose and need as well as human and natural environmental impacts, as were the other alignments.
- It was noted that any alternatives in this expanded study area that begin south of the I-140 (Wilmington Bypass) interchange at US 17 will need to include upgrade of US 17 north to this interchange in order to meet purpose and need.
- The agencies noted and acknowledged many concerns and ultimately deferred to NCDOT on the expanded study area. Therefore, in conjunction with agreement on the Purpose and Need, CP 1 was reached. The needs and purpose will be noted in the Purpose and Need Statement and on the CP 1 form as the following:

Project Need:

- Traffic Capacity Deficiencies
- North Carolina Port Access

Project Purpose:

The purpose of the proposed action is to improve traffic flow and enhance freight movements beginning in the vicinity of US 17 and future I-140 in Brunswick County across the Cape Fear River to US 421 near the Port of Wilmington in southern New Hanover County.

Alternatives Discussion

- URS explained that the level of design of alternatives to be presented for agreement as DSAs at CP 2 will be considered functional designs.
- USEPA noted that there needed to be discussion in the Alternatives Development Report regarding combinations of alternative concepts involving multi-modal, TSM, and TDM concepts. The project team will evaluate this further and update the merger team at the next meeting.
- USEPA questioned the use of 500 feet for use in screening of the existing US 17 corridor in the second screening, as it may overestimate impacts. It was explained that no segments along the existing US 17 corridor were eliminated during the second screening. All alignments were further analyzed in the third screening using a 350-foot wide corridor width for freeway alignments along US 17 and for new location alignments. 200 feet was used for alignments along US 17 designed as standard arterial widening. 160 feet was used for both screenings along US 421.
- USEPA questioned the validity of using Vehicle Miles Traveled (VMT) and Vehicle Hours Traveled (VHT) in the alternatives screening if a threshold wasn't established in the Purpose and Need Statement. Without a threshold, any alternative could potentially meet the purpose and need of the project. NCDOT explained that establishing a threshold could be perceived as arbitrary and that no alternatives were proposed to be eliminated based on this factor alone.
- USEPA was not comfortable eliminating Options E & O on the basis that they have a high number of relocations. USEPA explained that compensation is provided for relocations and that there is no law that requires avoiding or minimizing relocation impacts. Alternatives could potentially be eliminated, however, where there's a law or executive order providing protection, such as environmental justice.
- USACE reiterated that Options K & M should not be eliminated without further justification.
- SHPO questioned how additional cultural resources studies would be considered in the expanded study area. NCDOT explained that additional studies would be necessary regarding archaeological and historic resources, and would coordinate with the appropriate NCDOT personnel in this regard.
- NCDOT questioned why the portion of US 17 included in STIP R-3601 needed to be a part of this project, as it includes the widening of US 17 between the US 74/76/US 17 interchange and the NC 133/US 421 interchange. FHWA and NCDOT explained that the purpose of R-3601 was not to fully address future capacity deficiencies, but to improve merging and diverging operations on US 17/74/76 between the interchanges only. The Cape Fear Crossing upgrade of existing alternatives (not new location alternatives) are meant to address the need for additional capacity on this roadway that is beyond the scope of R-3601.
- USACE questioned whether the evaluation of an alternative that follows the railroad line through Brunswick Forest is still valid. Previous coordination with the former project engineer, Peter Trencansky, in an April 2009 memorandum showed that this interchange location would not be feasible. NCDOT explained that this will be evaluated to determine if previous conclusions regarding interchange/intersection spacing are still valid.

Action Items:

- NCDOT/URS to revise portions of the Purpose and Need Statement and Alternatives Development Report as noted during the meeting. These revisions include eliminating air draft clearance discussion in need portion of the Purpose and Need Statement; revising the first screening table shown on slide 18 of the presentation, including additional pink circles to note

interchange locations on the alternative figures, and including combinations of TSM/TDM/Multi-modal concepts in the Alternatives Development Report. The revised Purpose and Need Statement and Alternatives Development Report will be presented to the merger team at an upcoming merger meeting.

- NCDOT/URS to revisit the alignment proposed by USACE that follows the rail line through Brunswick Forest and determine if previous conclusions regarding interchange/intersection spacing are still valid.
- NCDOT to obtain the remaining signatures for the members of the merger team who joined by telephone.
- NCDOT to coordinate with Don Eggert of the Cape Fear RPO to determine if he wants to be a signatory member of the merger team or remain in an advisory role. The agreed upon study area has been expanded south of Town Creek which now includes a portion of the RPO jurisdiction in Brunswick County.



Cape Fear Crossing

STIP U-4738

Brunswick and New Hanover Counties

AGENDA

June 13, 2013

9:30 AM

Merger Meeting – CP 1 & Alternatives Discussion
NCDOT Century Center – Structure Design Conference Room

1. Project Status
2. Purpose and Need and Study Area Defined Discussion – CP 1
3. Alternatives Discussion
4. Project Schedule
5. Wrap Up/Next Steps


Cape Fear Crossing





Merger Meeting

CP 1 & Alternatives Discussion





June 13, 2013

STIP Project No. U-4738
Federal Aid Project No. STP-0017(53)
WBS No. 40114
Brunswick and New Hanover Counties, North Carolina






CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
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Agenda


- ❖ Project Status
- ❖ Purpose and Need and Study Area Defined Discussion - CP 1
- ❖ Alternatives Discussion
- ❖ Project Schedule
- ❖ Wrap Up/Next Steps

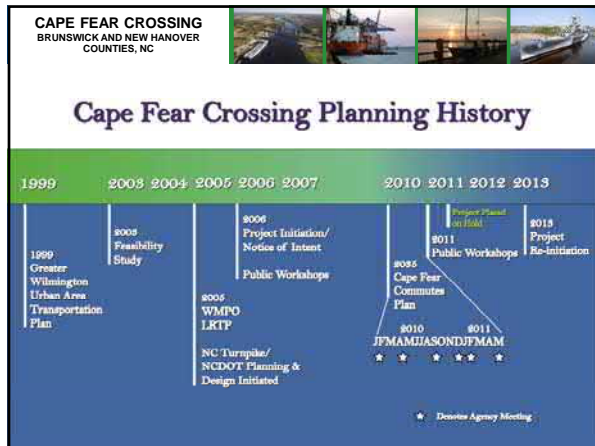


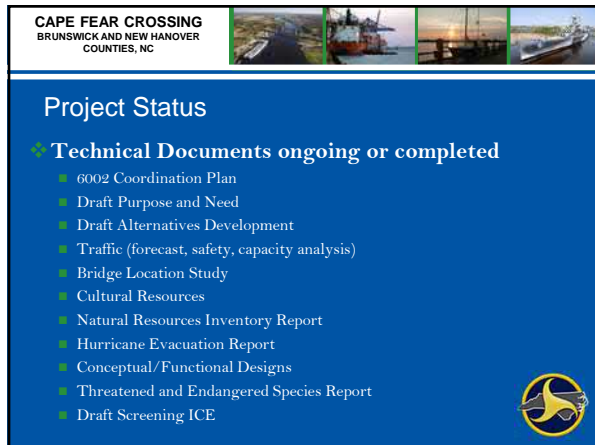
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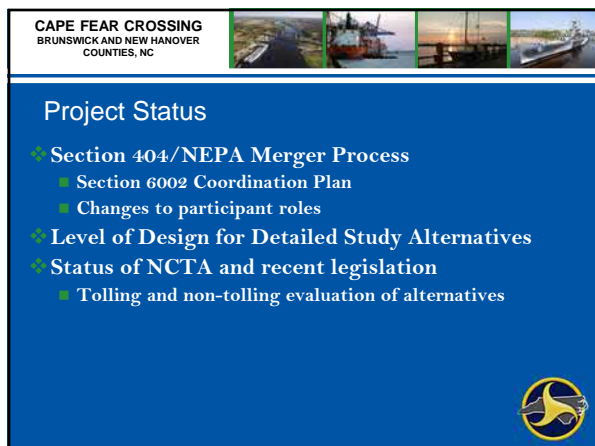


PROJECT STATUS









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 BRUNSWICK AND NEW HANOVER
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Agency Coordination to Date

- ❖ **Agency Scoping Meeting – January 2006**
- ❖ **TEAC #1 – February 2010**
 - Overview of the Draft Section 6002 Coordination Plan, the draft project study area, Draft Purpose and Need Statement, the alternatives screening methodology, preliminary alternative concepts
- ❖ **TEAC #2 – April 2010**
 - Comments on the Draft Section 6002 Coordination Plan, the draft project study area, Draft Purpose and Need Statement, the alternatives screening methodology, preliminary alternative concepts, and NCSA presentation

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Agency Coordination to Date

- ❖ **TEAC #3 – September 2010**
 - Comments received from the agencies on the draft Purpose and Need Statement and the first and second tier alternative screening summaries
- ❖ **TEAC #4 – December 2010**
 - Comments received from the agencies on the draft alternatives screening, summary of the first and second tier of alternatives screening results


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Agency Coordination to Date

- ❖ **TEAC #5 – January 2011**
 - Comments received from the agencies on the draft alternatives screening and results of the first and second tier of alternatives screening
- ❖ **TEAC #6 – May 2011**
 - Comments received from the public at the workshops held in March 2011, the results of the third tier of alternatives screening, and preliminary recommendations for Detailed Study Alternatives (DSAs)

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PURPOSE AND NEED AND STUDY AREA DEFINED




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Purpose and Need

The needs for the project include:

- ❖ Traffic Capacity Deficiencies
- ❖ Inconsistency with Regional Transportation Corridor Vision
- ❖ Inadequate Access to Port of Wilmington




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Purpose and Need

The purpose of the project is to:

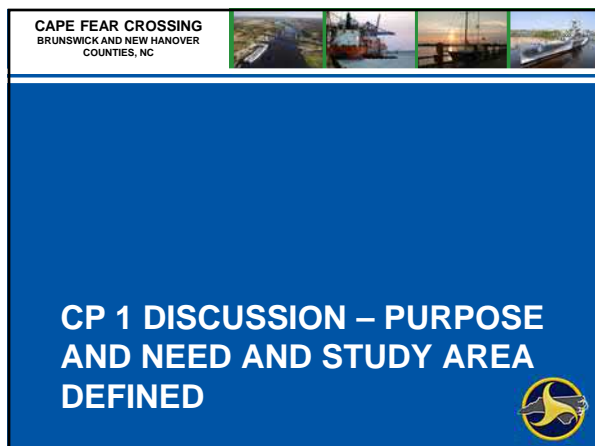
- ❖ Improve traffic flow and enhance freight movements beginning in the vicinity of US 17 and future I-140 in Brunswick County across the Cape Fear River to US 421 near the Port of Wilmington in New Hanover County.

Secondary benefits of the project would be to meet goals of Strategic Highway Corridor, NC Intrastate System, and WMPO LRTP, and provide reduced hurricane evacuation time.









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ALTERNATIVES DISCUSSION

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Summary of First Screening

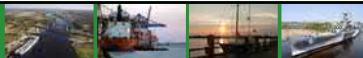
- ❖ Preliminary alternative concepts evaluated:
 - No-Build
 - Transportation Demand Management
 - Transportation Systems Management
 - Mass Transit/Multi-Modal
 - Improvements to Existing Roadways
 - New Location Roadways
 - Improve Existing / New Location Roadways Hybrids
- ❖ Alternatives qualitatively screened to determine if concepts meet Purpose and Need

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Summary of First Screening


Alternative	Improve Traffic Flow and Enhance Freight Movement	Provide Facility Consistent with Vision of the SHC and NC Intrastate System	Improve Connectivity between US 17 and the Port of Wilmington
No-Build	✗	✗	✗
Transportation Demand Management	✗	✗	✗
Transportation System Management	✗	✗	✗
Mass Transit/Multi-Modal	✗	✗	✗
Improve Existing US 17 (Widening Arterial) (Freeway)	✓	✗	✓
New Location Roadway	✓	✓	✓
New Location/Improve Existing Roadway Hybrids	✓	✓	✓

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Summary of Second Screening

- ❖ Quantitative process (second screening)
 - Corridor level classification
 - ✦ 29 segments combined into 33 corridors
 - ✦ Utilized GIS features to calculate impacts within 500-foot corridors (160 feet along US 421)
 - Eliminated Alternatives/Segments
 - ✦ Eliminated based on impacts and design constraints
 - ✦ Resulted in preliminary study corridors for use in third screening



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14 preliminary study corridors identified




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Third Screening Process

- ❖ Developed 20 conceptual designs within preliminary study corridors
 - Designs developed within 14 preliminary study corridors
 - Six additional conceptual designs using standard arterial widening (for those utilizing existing US 17)



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Conceptual Designs – 20 Corridors

New Location Options




Option	Segment Composition
A	1,2,3,4,5,27
B	1,2,3,4,13
C	1,2,3a,12a,4,5,27
D	1,2,3a,12a,4,13
E	1,7f,8,9,26
F	6f,7f,8,9,26
G	6f,2,3,4,5,27
H	6f,2,3,4,13
I	6f,2,3a,12a,4,5,27
J	6f,2,3a,12a,4,13
K	10,14,15,4,5,27
L	10,14,15,4,13
M	10,14,20,21,22,5,27
N	10,14,20,21,22,13
O	1,7a,8,9,26
P	6a,7a,8,9,26
Q	6a,2,3,4,5,27
R	6a,2,3,4,13
S	6a,2,3a,12a,4,5,27
T	6a,2,3a,12a,4,13




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Conceptual Designs – 20 Corridors


Upgrade Existing Option



Option	Segment Composition
A	1,2,3,4,5,27
B	1,2,3,4,13
C	1,2,3a,12a,4,5,27
D	1,2,3a,12a,4,13
E	1,7f,8,9,26
F	6f,7f,8,9,26
G	6f,2,3,4,5,27
H	6f,2,3,4,13
I	6f,2,3a,12a,4,5,27
J	6f,2,3a,12a,4,13
K	10,14,15,4,5,27
L	10,14,15,4,13
M	10,14,20,21,22,5,27
N	10,14,20,21,22,13
O	1,7a,8,9,26
P	6A,7a,8,9,26
Q	6A,2,3,4,5,27
R	6A,2,3,4,13
S	6A,2,3a,12a,4,5,27
T	6A,2,3a,12a,4,13




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Conceptual Designs – 20 Corridors

Hybrid Options

Option	Segment Composition
A	1,2,3,4,5,27
B	1,2,3,4,13
C	1,2,3a,12a,4,5,27
D	1,2,3a,12a,4,13
E	1,7f,8,9,26
F	6f,7f,8,9,26
G	6f,2,3,4,5,27
H	6f,2,3,4,13
I	6f,2,3a,12a,4,5,27
J	6f,2,3a,12a,4,13
K	10,14,15,4,5,27
L	10,14,15,4,13
M	10,14,20,21,22,5,27
N	10,14,20,21,22,13
O	1,7A,8,9,26
P	6A,7A,8,9,26
Q	6A,2,3,4,5,27
R	6A,2,3,4,13
S	6A,2,3a,12a,4,5,27
T	6A,2,3a,12a,4,13



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Conceptual Designs – 20 Corridors

Option	Segment Composition
A	1,2,3,4,5,27
B	1,2,3,4,13
C	1,2,3a,12a,4,5,27
D	1,2,3a,12a,4,13
E	1,7f,8,9,26
F	6f,7f,8,9,26
G	6f,2,3,4,5,27
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I	6f,2,3a,12a,4,5,27
J	6f,2,3a,12a,4,13
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L	10,14,15,4,13
M	10,14,20,21,22,5,27
N	10,14,20,21,22,13
E/O	1,7A,8,9,26
F/P	6A,7A,8,9,26
G/Q	6A,2,3,4,5,27
H/R	6A,2,3,4,13
I/S	6A,2,3a,12a,4,5,27
I/T	6A,2,3a,12a,4,13

Arterial Widening Options
- options correspond to freeway alternatives

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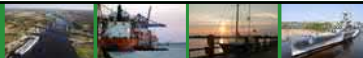
Conceptual Designs – 20 Options

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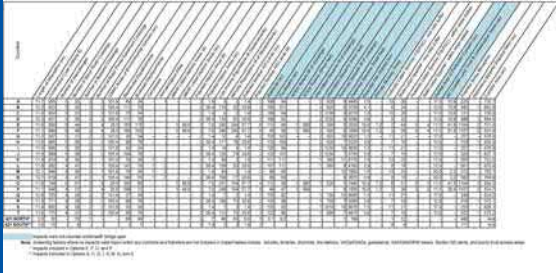
Third Screening Process

- ◆ Determined impacts for conceptual designs based upon design footprint utilizing GIS features
 - Impact comparison between options


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Third Screening Process




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Third Screening Process

- ❖ Developed Stoney Creek avoidance alternative
 - Large amount of opposition at March 2011 public workshops
 - Impact comparison




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Stoney Creek Avoidance Alternatives (Options K, L, M, and N)

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Third Screening Process

- Used VHT/VMT analysis as an additional measure of effectiveness
 - Determined performance of conceptual designs by their ability to increase average speeds within road network



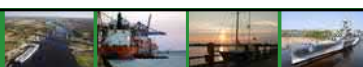
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VMT and VHT Analysis

Scenario	Average Network Speed (mph)	Average Network Speed % Change	Average Network Speed (mph)	Average Network Speed % Change	Average Network Speed (mph)	Average Network Speed % Change	Average Network Speed (mph)	Average Network Speed % Change
	WMPO Area		Study Area		Brunswick County		New Hanover County	
No-Build	38.9	-	37.6	-	40.8	-	36.4	-
A/C	42.8	10.0	43.3	15.4	53.3	30.7	37.7	3.7
B/D	42.8	10.0	43.4	15.5	53.6	31.5	37.7	3.6
E	40.8	4.8	40.5	7.8	44.9	10.1	37.5	3.1
F	40.4	3.9	40.0	6.5	43.3	6.3	37.6	3.3
G/I	43.0	10.5	43.7	16.4	53.7	31.7	37.8	3.9
H/J	43.0	10.5	43.9	16.8	53.9	32.2	37.8	3.9
K	42.3	8.8	42.4	13.0	51.0	25.2	37.7	3.6
L	42.5	9.3	42.7	13.7	51.6	26.5	37.8	3.8
M	42.3	8.8	42.4	12.9	51.0	25.3	37.7	3.5
N	42.5	9.2	42.7	13.8	51.7	26.7	37.7	3.7
O	41.1	5.6	40.9	8.8	44.8	10.0	37.9	4.3
P	41.1	5.5	40.9	9.0	45.4	11.4	37.7	3.7
Q/S	42.9	10.2	43.5	15.8	53.5	31.2	37.8	3.9
R/T	42.8	10.0	43.5	15.8	53.6	31.6	37.7	3.6


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VMT and VHT Analysis


Scenario	Average Network Speed (mph)	Average Network Speed % Change	Average Network Speed (mph)	Average Network Speed % Change	Average Network Speed (mph)	Average Network Speed % Change	Average Network Speed (mph)	Average Network Speed % Change
	WMPO Area		Study Area		Brunswick County		New Hanover County	
No-Build	38.9	-	37.6	-	40.8	-	36.4	-
A/C	42.8	10.0	43.3	15.4	53.3	30.7	37.7	3.7
B/D	42.8	10.0	43.4	15.5	53.6	31.5	37.7	3.6
E	40.8	4.8	40.5	7.8	44.9	10.1	37.5	3.1
F	40.4	3.9	40.0	6.5	43.3	6.3	37.6	3.3
G/I	43.0	10.5	43.7	16.4	53.7	31.7	37.8	3.9
H/J	43.0	10.5	43.9	16.8	53.9	32.2	37.8	3.9
K	42.3	8.8	42.4	13.0	51.0	25.2	37.7	3.6
L	42.5	9.3	42.7	13.7	51.6	26.5	37.8	3.8
M	42.3	8.8	42.4	12.9	51.0	25.3	37.7	3.5
N	42.5	9.2	42.7	13.8	51.7	26.7	37.7	3.7
O	41.1	5.6	40.9	8.8	44.8	10.0	37.9	4.3
P	41.1	5.5	40.9	9.0	45.4	11.4	37.7	3.7
Q/S	42.9	10.2	43.5	15.8	53.5	31.2	37.8	3.9
R/T	42.8	10.0	43.5	15.8	53.6	31.6	37.7	3.6

CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC




VMT and VHT Analysis

- ❖ Greatest improvement overall in network speed
 - Options that are hybrids of upgrade existing and new location (G, H, I, J, Q, R, S, and T)
- ❖ Slightly lower improvement than those above
 - Options that connect to I-140 (A, B, C, and D)
 - Options similar to feasibility alignment (K, L, M, and N)
- ❖ Least improvement in network speeds
 - Options that involve upgrading existing US 17 (E, F, O, and P)




CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC




Detailed Study Alternatives Discussion

- ❖ Recommended options for elimination
 - Eliminate hybrid options E and O
 - High number of relocations, historic areas, minimal improvement to traffic operations
 - Eliminate Stoney Creek (western terminus) options
 - Options K, L, M, and N - high number of residential relocations in Snee Farm and Stoney Creek communities




CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC



Option	Previous Recommendation	Current Recommendation
A	✓	✓
B	X	✓
C	✓	✓
D	X	✓
E	X	X
F	✓	✓
G	✓	✓
H	X	✓
I	✓	✓
J	X	✓
K	X	X
L	X	X
M	X	X
N	X	X
O	X	X
P	✓	✓
Q	✓	✓
R	X	✓
S	✓	✓
T	X	✓
K avoidance	X	✓
L avoidance	X	✓
M avoidance	X	✓
N avoidance	X	✓

CAPE FEAR CROSSING

BRUNSWICK AND NEW HANOVER
COUNTIES, NC



24 options
studied

- 6 recommended
for elimination
- 18 recommended
carried forward as
DSAs

Option	Previous Recommendation	Current Recommendation
A	✓	✓
B	X	✓
C	✓	✓
D	X	✓
E	X	X
F	✓	✓
G	✓	✓
H	X	✓
I	✓	✓
J	X	✓
K	X	X
L	X	X
M	X	X
N	X	X
O	X	X
P	✓	✓
Q	✓	✓
R	X	✓
S	✓	✓
T	X	✓
K avoidance	X	✓
L avoidance	X	✓
M avoidance	✓	✓
N avoidance	X	✓

CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC





Options Recommended for Elimination



CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC





Recommended Detailed Study Alternatives



CAPE FEAR CROSSING
 BRUNSWICK AND NEW HANOVER
 COUNTIES, NC

PROJECT SCHEDULE AND NEXT STEPS

CAPE FEAR CROSSING
 BRUNSWICK AND NEW HANOVER
 COUNTIES, NC

Project Schedule


- ❖ DEIS – Spring 2016
- ❖ FEIS – Summer 2017
- ❖ ROD – Winter 2017

CAPE FEAR CROSSING
 BRUNSWICK AND NEW HANOVER
 COUNTIES, NC

Next Steps (short-term)


- ❖ Next Merger Meeting – CP 2
- ❖ Traffic forecasting
- ❖ Initiate natural resources field investigations
- ❖ Public outreach
- ❖ Complete technical studies (functional design plans, field investigations, cultural resource studies, etc.) for DSAs

CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC



Discussion

- ❖ CP 1 / Alternatives Discussion
- ❖ Schedule next Merger Meeting



Interagency Merger Process Team Meeting

Concurrence Point 1

June 13, 2013

Cape Fear Crossing Project New Hanover and Brunswick Counties, North Carolina STIP Project No. U-4738

PURPOSE OF THE MEETING

The primary purpose of this meeting is to present information to the Interagency Merger Process Team (Merger Team) for review and comment, and to obtain concurrence on the project's Purpose and Need and Project Study Area.

PROPOSED ACTION

The North Carolina Department of Transportation (NCDOT) proposes to construct a project known as the Cape Fear Crossing (formerly the Cape Fear Skyway), which would extend from the vicinity of US 17 and future I-140 in Brunswick County to US 421 in southern New Hanover County, including a crossing of the Cape Fear River.

According to the *Feasibility Study for the Wilmington Southern Bridge from US 17 Bypass near Bishop to US 421* prepared by the NCDOT in August 2003, the project would serve multiple users, including the Port of Wilmington, the military, commuters, and tourists. **Figure 1** shows the Wilmington region, and **Figure 2** shows the general project location and study area. **Figure 3** shows environmental features of the proposed study area.

The proposed action is listed in the 2012-2016 State Transportation Improvement Program (STIP) as Project Number U-4738. It is listed as the "New route (Cape Fear Skyway), US 17 to Independence Boulevard-Carolina Beach Road intersection. Construct a new facility with a structure over the Cape Fear River". The project is proposed to be approximately 9.5 miles.

The Wilmington Urban Area Metropolitan Planning Organization's (WMPO) current Long Range Transportation Plan (LRTP), entitled the *Cape Fear Commutes 2035 Transportation Plan* (December 2010) cites the project as an important intermodal connector to improving freight movements in the Wilmington Area and accommodating anticipated growth at the Port of Wilmington. The plan cites the project as the highest profile project that is not funded through the LRTP, and is anticipated to be part of a comprehensive transportation network connecting Brunswick County to New Hanover County.

Project Schedule

Draft Environmental Impact Statement
Final Environmental Impact Statement
Record of Decision

Spring 2016
Summer 2017
Winter 2017

PROJECT HISTORY

Formerly referred to as the Cape Fear Skyway, the Cape Fear Crossing has been included in various plans and studies in the Wilmington area for the past two decades. It was first described, with the current eastern and western termini, in the *Greater Wilmington Urban Area Transportation Plan 1999-2025* (City of Wilmington and NCDOT, August 1999) and the *Greater Wilmington Urban Area Transportation Plan Technical Report* (NCDOT, March 2001). It was subsequently analyzed in the *Feasibility Study for the Wilmington Southern Bridge from US 17 Bypass near Bishop to US 421* (NCDOT, August 2003), and then included in the 2030 LRTP in 2005.

The *Greater Wilmington Urban Area Transportation Plan 1999-2025* (City of Wilmington and NCDOT, August 1999) indicated that a previous thoroughfare plan from 1993 showed the project (called the “Southern Bridge”) as an extension from Independence Boulevard at US 421 west across the Cape Fear River, and northward on Eagle Island to an interchange with US 74/76 at US 421. The recommendation in the 2025 Plan was to keep the southern terminus of the project at Independence Boulevard, but to move the western terminus to south of Belville and Leland, ending at an interchange with existing US 17 and the proposed Wilmington Bypass (I-140). Updated models determined that this change in location would reduce traffic on bridges crossing the Cape Fear River.

As described in the 2025 Plan, the “Southern Bridge” was a proposed freeway with interchanges at US 17 (western terminus), NC 133, and US 421 (eastern terminus). According to the 2025 Plan, the “Southern Bridge” would help form an urban loop on the western side of Wilmington and would reduce congestion on the Cape Fear Memorial Bridge (on US 17 Business) and the Isabel Holmes Bridge (crossing of Northeast Cape Fear River) and enhance freight mobility. The project was also identified as being particularly important in enhancing truck access to the Port of Wilmington and improving the flow of all vehicles in and around the Wilmington area. The 2025 Plan recommended that alternative sources of funding for the project should be sought in the form of freight mobility funds that may be available from the state ports or through tolls.

In 2003, NCDOT prepared the *Feasibility Study for the Wilmington Southern Bridge from US 17 Bypass near Bishop to US 421* (NCDOT, August 2003). This feasibility study indicated the project would serve multiple users, including the Port of Wilmington, the military, commuters and tourists. The feasibility study was consistent with recommendations in the 2025 Plan, as it showed the project as a proposed freeway beginning at US 17 and terminating at US 421. It addressed the need for the project to serve the North Carolina State Ports, as well as the traveling public in and around the Wilmington area.

The current WMPO LRTP, the *Cape Fear Commutes 2035 Transportation Plan* (2035 LRTP), was finalized in 2010. The 2035 LRTP lists the development of the Cape Fear Crossing as an important connector to improving the freight movement in the WMPO area. It further recognizes that this roadway project of regional importance falls outside the parameters of the plan for funding purposes. The Cape Fear Crossing is currently not funded, but anticipated to be funded principally by tolls. If built, the Crossing would significantly alter travel patterns in the region.

The Cape Fear Crossing is included as STIP Project No. U-4738 in the 2012-2016 NCDOT STIP. Right-of-way acquisition and construction are scheduled beyond fiscal year 2020, and the project is currently programmed for planning and environmental study only.

Concurrence Point 1: Purpose and Need

PURPOSE OF AND NEED FOR THE PROPOSED ACTION

Need for Proposed Action

- **Traffic Capacity Deficiencies**

Travelers use the Cape Fear Memorial Bridge (US 17 Business), the Isabel Holmes Bridge (NC 133), and the Dan Cameron Bridge (I-140/US 17) to travel between Brunswick and New Hanover Counties for commuting and shopping. Currently, US 17 (which includes the Cape Fear Memorial Bridge as US 17 Business) serves as one of the primary entry points into the City of Wilmington from the west. Travelers coming to Wilmington from the west access US 17 Business from US 17, NC 133, US 74/76, and US 421/US 17. Once across the Cape Fear River, travelers can continue on US 17 Business to connect to areas in northern and eastern New Hanover County, or use US 421 to access southern New Hanover County and the Port of Wilmington. The WMPO included the project in the 2035 LRTP (WMPO, December 2010) and determined that an additional facility is needed to carry traffic across the Cape Fear River to alleviate congestion on the existing Cape Fear Memorial Bridge and improve access to the Port of Wilmington and southern New Hanover County. The WMPO determined that this need could be met by extending the Wilmington Bypass southward and eastward across the Cape Fear River toward the Port of Wilmington and US 421. According to the WMPO, the Cape Fear Crossing is proposed in its current location at the Wilmington Bypass, as opposed to connecting to US 421 as in previous plans, because traffic models determined that a Cape Fear Crossing interchange with existing US 17 and the proposed Wilmington Bypass (I-140) would reduce traffic volumes on bridges crossing the Cape Fear River.

Analysis of the existing roadway network with 2008 traffic data resulted in several minor movements associated with unsignalized intersections along US 17 operating at Level of Service (LOS) F. The freeway segment of US 17 from SR 1472 (Village Road) to US 421/NC 133 (approximately a two-mile segment), is over capacity and is operating at LOS F. US 17 from south of the proposed Wilmington Bypass interchange to Third Street (which includes the Cape Fear Memorial Bridge) is projected to be over capacity and functioning at LOS F in 2035. The segment of US 17 from south of SR 1701 (Zion Church Road) to US 74/US 76 is approximately 6 miles long, includes 28 signalized intersections and is projected to operate at LOS F in 2035. The freeway segments between US 74/US 76 and Third Street are approximately 4 miles long and will also be functioning at LOS F in 2035, in addition to the signalized intersections of Third Street with Dawson Street and Wooster Street.

Built in 1969, the Cape Fear Memorial Bridge is a through-truss bridge with a 408-foot long vertical lift main span. It has a steel grate decking and includes two 12-foot lanes in each direction, a two-foot barrier divided median, 1.5 - foot inside and outside shoulders, 1.4 - foot outside curbing to the guardrail face, and has a posted speed limit of 45 miles per hour (mph) (NCDOT, Machinery Inspection Report, February 2008). According to the *Final Traffic Forecast for TIP Project U-4738 Cape Fear Skyway* (Wilbur Smith Associates, June 2008), 52,700 daily trips utilized the Cape Fear Memorial Bridge in 2008 with 113,700 daily trips projected in 2035.

This through-truss bridge type precludes the ability to increase its capacity further than that provided by the original design. The tower design is directly related to the lift span design and the lift span is designed to accommodate a maximum four-lane configuration. The opening through the towers that accommodates the four-lane configuration of the lift span cannot be changed, as the trusses carrying the load to the bridge are adjacent to the travel way; therefore, the bridge would need to be replaced if additional lane capacity for a bridge crossing the Cape Fear River at that location is desired.



Cape Fear Memorial Bridge
Website: www.ncdot.org/doh/operations/dp_chief_eng/maintenance/bridge/cape_fear.html

The Cape Fear Memorial Bridge opens to allow passage of waterway traffic 24 hours a day on demand, resulting in delays to vehicular traffic at various times throughout the day and not necessarily to any particular time of day or peak/non-peak traffic hours (NCDOT Website: www.ncdot.org/doh/operations/dp_chief_eng/maintenance/bridge/cape_fear.html). According to NCDOT bridge-opening logs, the Cape Fear Memorial Bridge opened an average of 20 times per month from January 2012 to December 2012 and was open for an average of 11 minutes per opening, queuing an average of 1,200 vehicles per opening (NCDOT, December 2012).

Without improvements to the existing network, US 17, from south of the proposed Wilmington Bypass interchange to Front Street in Wilmington (over a 10-mile long segment), will be over capacity and function at LOS F in 2035. From the west, this roadway, including the Cape Fear Memorial Bridge, serves as one of the main entry points into the City of Wilmington and the Port of Wilmington. The Cape Fear Memorial Bridge was not designed to support the area's current and proposed future population. Inadequate shoulder widths, median widths, and lane widths hinder its traffic carrying capacity. From the east, the opening of the lift-span bridge creates additional delay to the Dawson Street/Wooster Street corridors, as well as creates additional, periodic congestion on US 17. It is also likely that future population growth and development in the area will increase travel demand from areas in the eastern portion of Brunswick County to southern New Hanover County.

- **Inconsistency with Regional Transportation Corridor Vision**

The proposed Cape Fear Crossing is included as a part of the NCDOT's Strategic Highway Corridor (SHC) Vision Plan for North Carolina. It is included as part of Corridor 06.D, which is one of 55 corridors included in the SHC Vision Plan. Corridor 06.D is described as I-140 from US 421 (south) to NC 17 (north). The Wilmington Bypass will be designated as an Interstate (I-140), while the Cape Fear Crossing will not necessarily receive an Interstate designation. While the SHC Vision Plan determines interstate designations, tolled sections are not included as interstates. The recommended facility type for the corridor is a freeway. The project would intersect with US 17, which serves as a vital link in the regional transportation system and is included in the SHC Vision

Plan as Corridor 51. The SHC is intended to provide efficient and safe travel throughout North Carolina and adjoining states, and to allow for efficient military deployment.

The Cape Fear Crossing is listed as a priority project in the WMPO's 2035 LRTP. The 2035 LRTP describes the Cape Fear Crossing as a project that extends east from US 17 at the proposed I-140 (Wilmington Bypass) interchange, across the Cape Fear River, to Independence Boulevard at US 421 (Carolina Beach Road). The project would alleviate congestion on the existing Cape Fear Memorial Bridge and improve access to the Port of Wilmington and southern New Hanover County.

When completed, Corridor 06.D would facilitate access to the Port of Wilmington, located along the east bank of the Cape Fear River south of US 17 Business. The Port of Wilmington is a major east coast port that serves military, container, bulk, breakbulk, and specialty cargo operations. The Port of Wilmington has been identified as one of the nation's Strategic Seaports, capable of simultaneously handling commercial and military requirements. Each Strategic Seaport is unique in its capabilities and provides the Department of Defense with operational flexibility/redundancy with port facilities and services that are critical in meeting a wide range of national security missions and timelines. The Port of Wilmington provides significant support for military deployments, redeployments and humanitarian efforts; this primarily involves support for military deployments from the Marine Corps Base Camp Lejeune, and the United States Army installation of Fort Bragg. Recent Base Relocation and Closure (BRAC) and 'Grow the Force' initiatives at Marine Corps Base Camp Lejeune and the United States Army installation of Fort Bragg will bring significant growth to the region and provide an opportunity for the state and Authority to increase its port activity by serving NC's defense community (NCSPA, February 2008).

The proposed corridor would also facilitate access to Military Ocean Terminal at Sunny Point (MOTSU), resulting in improved military deployments from its terminal on the west bank of the Cape Fear River. MOTSU is the Department of Defense's (DOD) only east coast ammunition port facility, and it supports DOD ammunition shipment requirements worldwide from its terminal on the Cape Fear River. The main gate to the MOTSU terminal is located on NC 133 south of the study area.

Corridor 06.D, which includes the Cape Fear Crossing, would enhance access between northeastern Brunswick County and southern New Hanover County, and generally improve access in and around the Wilmington Urban Area. Without improvements to the network, deficiencies in the existing network would reduce the ability of US 17 (and other roads) to function as an efficient Intrastate route, an SHC, and a STRAHNET corridor.

- **North Carolina Port Access**

The North Carolina State Ports Authority (NCSPA) owns or operates North Carolina's Port of Wilmington and Port of Morehead City deepwater ports and Greensboro and Charlotte inland terminals.

Based on information provided by the NCSPA, there are a number of congestion and safety issues associated with the routes being used by trucks. South Front Street (US 421 Truck) is the main access road for the Wilmington Port's North Gate traffic via Burnett Boulevard, and to the Port's South Gate traffic via US 421 and Shipyard Boulevard. South Front Street is also utilized by other industrial users including two private port terminal operators; Hess and Colonial. Both have active trucking and rail operations exacerbating congestion and safety issues along the route. Burnett Boulevard is also one of the gateways to the National Register of Historic Places (NRHP) listed

Sunset Park neighborhood and truck traffic along this section of Burnett Boulevard (between the Port's North and South Gates) is prohibited. Between US 74/76 and Burnett Boulevard, a portion of South Front Street also has active rail lines along the center lane with three railroad crossings within two blocks. A number of improvements to South Front Street (US 421 Truck) have been proposed to accommodate the growing truck traffic and to alleviate congestion.

The Port of Wilmington offers terminal facilities serving military, container, bulk, breakbulk, and specialty cargo operations. CSX Transportation (railroad) provides daily service for boxcar, tanker, and general cargo services. According to the most recent statistics by the American Association of Port Authorities (AAPA), the cargo volume at the Port of Wilmington was 7,428,160 short tons in 2012. The Port of Wilmington was ranked #59 of all container ports in the United States in container cargo throughput that same year (AAPA, 2012).

The Port of Wilmington is North Carolina's largest port with an operating terminal of 284 developed acres with two vacant industrial-zoned properties adjacent to the facility (available for future development). It is one of ten ports on the east coast; competing ports in the mid-Atlantic region include Virginia Ports Authority in Norfolk, Newport News, Portsmouth, and Front Royal; South Carolina State Ports Authority, with three port terminals in Charleston, Georgetown, and Port Royal; and the ports of Georgia in Savannah and Brunswick (North Carolina International Terminal Briefing Book, NCSPA, May 2008).

North Carolina's ports are an important economic asset not only to the areas where port facilities are located, but also to commerce and economic development efforts statewide. An economic impact report for North Carolina's Ports in Morehead City and Wilmington titled Economic Contribution of the North Carolina Ports (ITRE, 2011) showed that the Port of Wilmington directly supported more than 40,100 jobs in 2009. These are jobs that exist solely due to the existence of the Port of Wilmington facility and are directly related to the activities of the Port of Wilmington; jobs like stevedores, terminal operators, truckers, steamship agents, freight forwarders, and others on the terminal and involved in maritime activities. Overall, North Carolina ports directly and indirectly support 65,000 jobs, which contribute nearly \$500 million annually in state and local tax revenues based on the Ports' fiscal 2005 cargo volumes (ITRE, 2011).

Port officials indicate that container, specialized cargo, and military vehicle traffic enters/exits the Port of Wilmington via the South Gate entrance/exit on Shipyard Boulevard. The South Gate necessitates the use of Shipyard Boulevard to Carolina Beach Road (US 421 North), to Front Street (US 421 North Truck Route) to the Cape Fear Memorial Bridge to access US 421, US 74/76, and US 17, or Shipyard Boulevard to College Road north to access I-40 (NCSPA, personal communication, April 2009).

The bulk and breakbulk cargo vehicle traffic enters/exits the Port of Wilmington via the North Gate entrance/exit on Burnett Boulevard. The North Gate necessitates the use of Burnett Boulevard to Front Street (US 421 North Truck Route) to the Cape Fear Memorial Bridge to access US 421, US 74/76, and US 17. In order to access I-40, truck traffic utilizing the North Gate would likely use US 421 N to the I-140 Wilmington Bypass.

The single largest truck customer for the Port of Wilmington containers is located in Charlotte. In fact, the top Charlotte customer (not including other destinations in that vicinity or region) is more than three times larger than the next largest beneficial cargo owner customer in North Carolina. Five of the top 16 port customers are located in the Charlotte Economic Development region and

those five customers made up more than 25 percent of the total container traffic (origin/destinations) to the Port of Wilmington in fiscal year 2009.

The other primary origin/destination market for containers in North Carolina is the Piedmont Triad region. Six of the largest origin/destination locations (out of the top 16 port customers) in the Piedmont Triad made up more than 17 percent of the total container market origin/destinations for the Port of Wilmington in fiscal year 2009.

The other top origin/destinations for Port of Wilmington container cargoes include Rutherford and Caldwell counties in the West Economic Development region and Nash County in the East Economic Development region. The top sixteen customers in North Carolina made up more than 52 percent of the total origin/destinations for the Port of Wilmington's container traffic in fiscal year 2009. Overall, the Charlotte and Piedmont Triad origin/destinations made up the largest majority of port container traffic.

There are a number of congestion and safety issues associated with these routes being used by trucks. The first issue is related to the location of Sunset Park neighborhood which is adjacent to the Port of Wilmington on the east. The neighborhood does not allow through truck traffic, which necessitates separate gates to the north and south of the facility.

The major congestion and safety issue in the area is Front Street. NCDOT has encouraged the WMPO to expand South Front Street (US 421 Truck) to four lanes to better accommodate the growing truck traffic and to alleviate congestion. This project has been recognized in the 2035 LRTP for possible upgrade in 2026 – 2035.

Front Street (along the designated Truck Route) has also been designated North Carolina Bicycling Highway 3 and 5. The NCDOT, as part of the North Carolina concept of Complete Streets, has funded and completed a resurfacing project that included on-road bicycle lanes along South Front Street (US 421 Truck) between the Memorial Bridge and Burnett Boulevard. This project narrowed the truck travel lanes within the existing pavement width to accommodate bicycle lanes. This meant altering existing 15-foot wide truck lanes to 11 feet and adding a 4 feet wide bike lane, in certain areas of the project. NCDOT Resurfacing project C202476 has been completed and is currently in operation (NCDOT, April 2013).

All of the truck routes around the Port of Wilmington are expected to operate at a poor LOS in 2035. Future growth projections suggest that congestion levels on the local transportation network could hamper the Port's growth plans and competitiveness. Deficiencies in the existing transportation network diminish the ability to efficiently distribute goods and services from the Port of Wilmington.

According to the Brunswick County Transportation Plan (NCDOT, December 2001), Wilmington is possibly the only port city that has a drawbridge (Cape Fear Memorial Bridge) as the primary entrance to the city. As discussed previously, the Cape Fear Memorial Bridge opened an average of 20 times per month from January 2012 to December 2012 and was open for an average of 11 minutes per opening, queuing an average of 1,200 vehicles per opening (NCDOT, December 2012). This could potentially cause delays to traffic en route to the Port via the Cape Fear Memorial Bridge (US 17 Business), as the bridge opens at various times throughout the day and is not limited to any particular time of day or peak/non-peak traffic hours.

Finally, port officials state that there are minimum air draft requirements associated with bridge height. The construction of a bridge that could obstruct air draft for the vessels utilizing the navigation channel should be studied with serious consideration. Currently, vessels that call, or are interested in calling, on the Port of Wilmington that require considerable air draft clearances are cruise ships and container vessels. Due to the existing Progress Energy power lines defining the controlling air draft limitation for the Cape Fear River navigation channel, only small cruise vessels currently call on the Port of Wilmington. In order to adequately service future container services that will call on the Port of Wilmington, it would be necessary to provide an air draft clearance of approximately 200 foot clearance to accommodate all vessels that could transit the Panama Canal. Air draft heights would need to be evaluated to determine the adequate height needed to develop a sustainable cruise industry in Wilmington.

Port of Wilmington officials state that the proposed action is necessary to accommodate growth, and the Cape Fear Crossing has been identified by the NCSPA as a freight corridor priority (Presentation to 21st Century Transportation Intermodal Committee, NCSPA, February 2008). Without improvements to the existing transportation/distribution network, the Port of Wilmington may not be able to capitalize on the opportunity for increased shipping and cargo volumes. In addition, one of the planning goals listed in the *Greater Wilmington Urban Area Transportation Plan 1999-2025* (City of Wilmington and NCDOT, August 1999) is that an increased number of freight options be developed for improved accessibility to the Port of Wilmington. According to the 2025 Plan, this would include a “Southern Bridge” project, described as a proposed freeway with interchanges at US 17 (western terminus), NC 133, and US 421. The 2035 Cape Fear Commutes Plan reiterates this need for increased freight movement by identifying improvements to the US 74 Corridor and CSX rail line, as well as restoration of the rail line to Raleigh as key priorities moving forward.

Purpose of Proposed Action

The purpose of the proposed action is to improve traffic flow and enhance freight movements beginning in the vicinity of US 17 and future I-140 in Brunswick County across the Cape Fear River to US 421 near the Port of Wilmington in southern New Hanover County.

Potential Secondary Benefits

In addition to addressing the primary need, the potential exists for additional benefits as a result of the proposed action that are discussed in further detail below:

- **North Carolina Strategic Highway Corridor Initiative**

A secondary benefit of the project would be to meet the goals of the transportation visions in the North Carolina Strategic Highway Corridor Initiative, the North Carolina Intrastate System, and the WMPO’s Long Range Transportation Plan. Consistency with these plans will be considered during the evaluation of alternatives.

- **Hurricane Evacuation**

This project would reduce hurricane evacuation clearance time for residents and visitors who use the area thoroughfares during evacuation, as well as aid in emergency evacuation from Progress Energy’s Brunswick Nuclear Plant in Southport, North Carolina.

DRAFT PROJECT STUDY AREA

The first step of the alternatives development for the Cape Fear Crossing project was the delineation of a study area, which is defined as the area within which all reasonable alternatives that meet the intended purpose of and need for the project can be designed and constructed. The study area limits were developed based on a number of considerations, including potential project termini, river crossing locations, system level travel demands, public input, and legislation pertaining to urban loops (**Figure 2**).

Western Boundary To the west, the study area boundary is in the vicinity of the communities of Bishop and Spring Hill. Currently, there are no access controlled facilities within this portion of the study area; however, a terminus of I-140 located along US 17, between Bishop and Spring Hill, is currently being constructed. This portion of the study area also includes a mixed-use development (5,000 to 6,000 acres) under construction with approximately 12,000 home sites. 300 acres of commercial land in this mixed-used development is currently under construction.

Eastern Boundary To the east, the study area boundary extends east of the Cape Fear River to include a portion of the City of Wilmington in New Hanover County. This portion of the study area includes a portion of the City of Wilmington's downtown district, the Port of Wilmington, and a mixture of commercial centers, restaurants and offices in addition to more residential setting south of Shipyard Boulevard. No access controlled facilities are included within this portion of the study area.

Southern Boundary To the south, the study area boundary generally follows along the north side of Town Creek and its associated wetland system. This portion of the study area includes properties owned by the North Carolina Coastal Land Trust (NCCLT). No access controlled facilities are included within this portion of the study area.

Northern Boundary To the north, the study area boundary extends parallel and north of US 17 and US 17 Business, including Belville and portions of the Leland community and the City of Wilmington. East of the US 74/76 interchange, US 17 and US 17 Business is a full control of access facility until South Third Street. US 17 exits the study area to the north by merging with US 421, which has no control of access. This portion of the study area allows for the analysis of alternatives that begin with a new interchange on the proposed Wilmington Bypass (I-140). Within this portion of the study area, US 17 has an existing bridge crossing of the Brunswick River and US 17 Business crossing of the Cape Fear River via the Cape Fear Memorial Bridge. Additionally, adjacent to the northern boundary several resources have been identified, which include NC State Ports Authority property, parks, gamelands or protected lands, and the NRH-listed Wilmington Historical and Archeological District.

NO-BUILD TRAFFIC FORECAST

The study area for the 2008 and 2035 No-Build capacity analysis consisted of the roadway network which the proposed project would potentially affect. The capacity analysis study area includes US 17/US 17 Business from south of the proposed I-140 interchange to Front Street and US 421 from south of I-140 to south of Independence Boulevard.

As stated previously under "Project Needs", US 17 (which includes the Cape Fear Memorial Bridge as US 17 Business) serves as one of the primary entry points into the City of Wilmington from the west. Once across the Cape Fear River, travelers can continue on US 17 Business to connect to

areas in northern and eastern New Hanover County, or use US 421 to access southern New Hanover County and the Port of Wilmington. The WMPO has determined that an additional facility is needed to carry traffic across the Cape Fear River to alleviate congestion on the existing Cape Fear Memorial Bridge and improve access to the Port of Wilmington and southern New Hanover County.

Analysis of the existing roadway network with 2008 traffic data resulted in several minor movements associated with unsignalized intersections along US 17 operating at Level of Service (LOS) F. The freeway segment of US 17 from SR 1472 (Village Road) to US 421/NC 133 (approximately a two-mile segment), is over capacity and is operating at LOS F. US 17 from south of the proposed Wilmington Bypass interchange to Third Street (which includes the Cape Fear Memorial Bridge) is projected to be over capacity and functioning at LOS F in 2035. The segment of US 17 from south of SR 1701 (Zion Church Road) to US 74/US 76 is approximately 6 miles long, includes 28 signalized intersections and is projected to operate at LOS F in 2035. The freeway segments between US 74/US 76 and Third Street are approximately 4 miles long and will also be functioning at LOS F in 2035, in addition to the signalized intersections of Third Street with Dawson Street and Wooster Street.

The 2008 Base Year analysis resulted in 18 out of 70 analysis points operating at LOS E or worse, with two of the analysis points being associated with basic freeway segments, four analysis points associated with ramp junctions, five analysis points associated with signalized intersections, and seven analysis points associated with unsignalized intersections. The 2035 No-Build Conditions analysis resulted in 70 out of 95 analysis points operating at LOS E or worse, with 11 of the analysis points being associated with basic freeway segments, 16 analysis points associated with ramp junctions, one analysis point associated with weaving segments, 40 analysis points associated with signalized intersections and two analysis points associated with unsignalized intersections.

PUBLIC INVOLVEMENT

Citizens Informational Workshops

Two Citizens Informational Workshops (CIWs) were held at the outset of the study in April 2006. The purpose for the workshops was to introduce the proposed project and staff, educate the public on NCTA and toll roads, demonstrate to citizens how the project planning/design will progress, answer questions and collect important stakeholder feedback. The CIWs were attended by a total of 300 individuals. General issues that were found to be frequently stated in the comments received at the workshops are listed below:

- General response at both meetings was supportive of the project.
- The project was not progressing to construction quickly enough.
- The most opposition heard was from citizens who personally owned property close to the feasibility study alternative. Most of these comments were received from those who live near the eastern and western termini, and expressed concerns related to relocations, property values, traffic impacts on local streets, noise and air pollution.
- Many citizens feel this is a "political" project and the No-Build Alternative will not be considered seriously.
- During both meetings, participants wanted reassurance that there would be additional opportunities for public input prior to final decisions being made.

Two additional CIWs were held in March 2011 with a total of 417 attendees in New Hanover and Brunswick Counties to present the project purpose and need and preliminary alternatives, and to solicit input from the public on these topics.

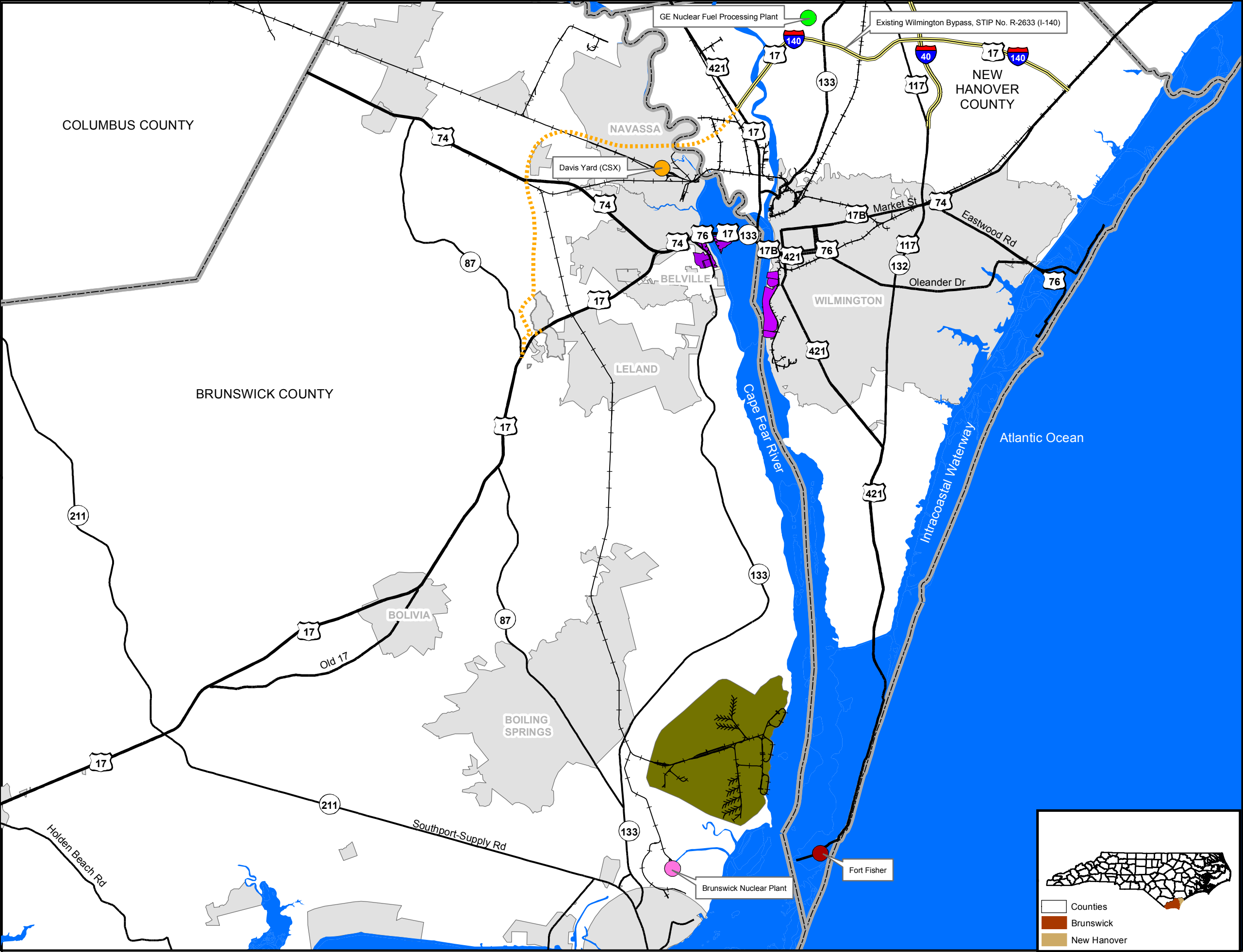
303 people submitted written comments during the comment period using the provided comment forms (287) or via email (16). Displays at the workshop included maps of the project study area and preliminary corridor segments, as well as information on the transportation planning process and the preliminary purpose and need for this project. Comment sheets were distributed to obtain public input on the project study area, identified project needs, purposes, and range of alternatives. General issues that were found to be frequently stated in the comments received at the workshops are listed below:

- Impacts to human environment – most notably impacts to the Stoney Creek/Snee Farm/Planters Walk developments.
- Concerns regarding completion of other projects such as I-140 and US 17 widening at causeway.
- Concerns regarding cost of the project and the amount of tolls.
- Opposition to project in general.
- Support of project due to congestion in area.
- Oppose project, yet are in favor of upgrading existing roads such as US 17.

Local Officials Meetings

Meetings with local officials were held before each CIW to present local elected officials the information to be presented to the public at each CIW.

FIGURES



CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738



Legend

- Proposed Wilmington Bypass STIP No. R-2633 (I-140)
- Interstate Highways
- US Highways
- State Highways
- Railroad
- County Boundary
- GE Nuclear Fuel Processing Plant
- Davis Yard
- Brunswick Nuclear Plant
- Fort Fisher
- Sunny Point Military Ocean Terminal
- NC State Ports Authority
- Open Water
- Municipal Boundary

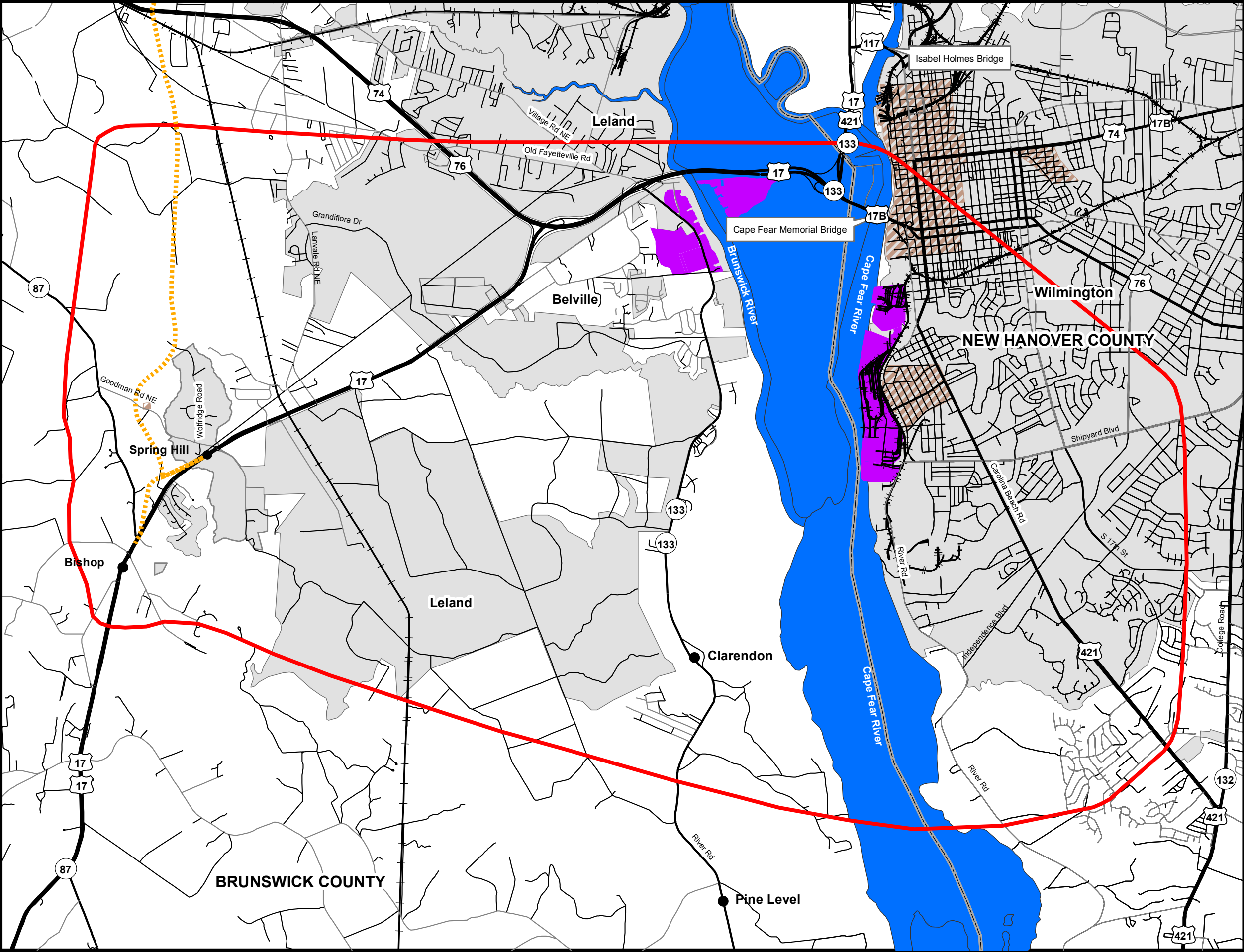


0 2.5 5 Miles

Cape Fear Crossing

**Figure 1
Project Vicinity**

Date: April 2011
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.



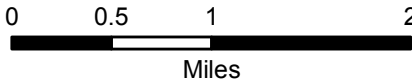
CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738



Legend

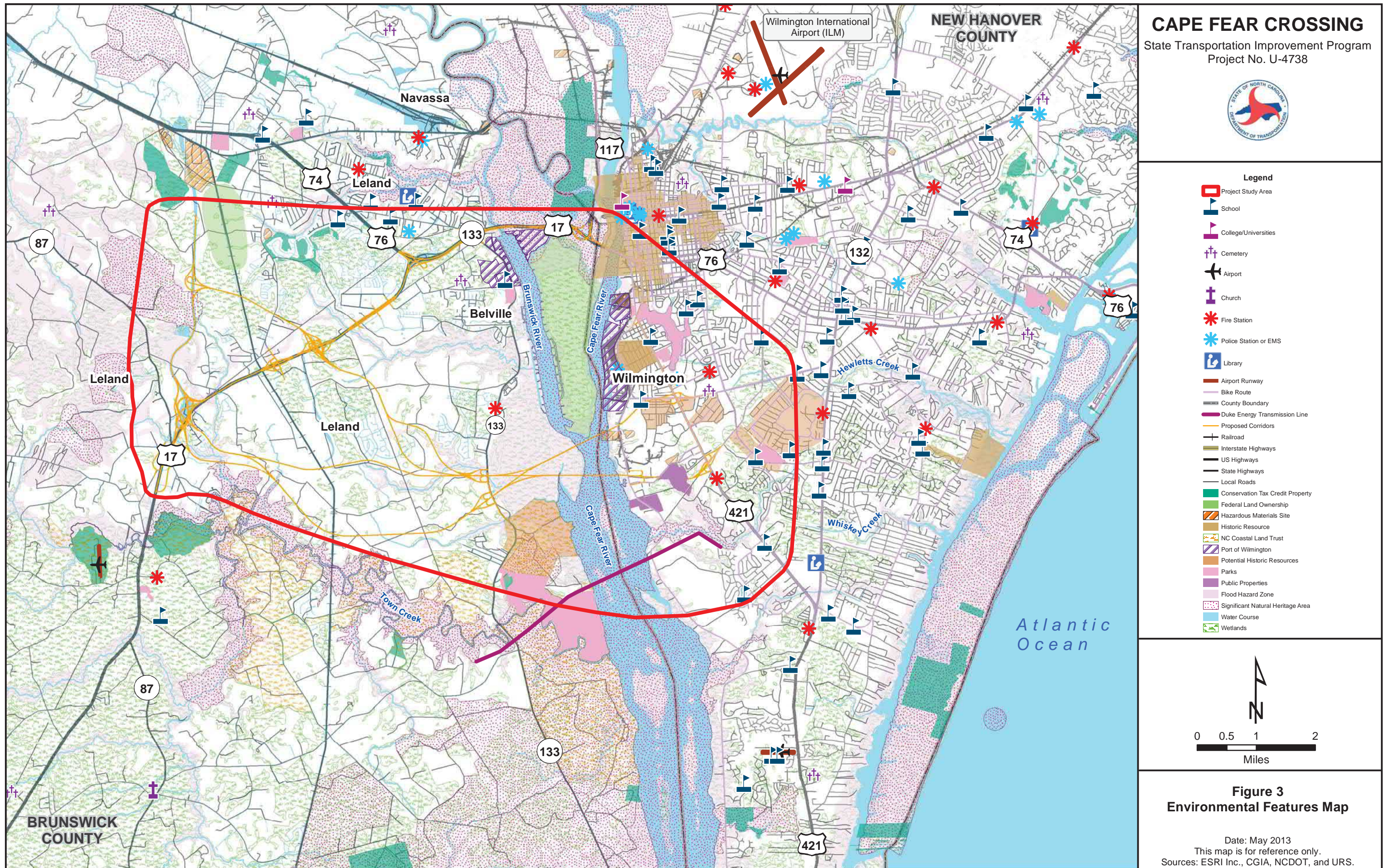
- Proposed Wilmington Bypass STIP No. R-2633 (I-140)
- Study Area
- US Highways
- State Highways
- Local Roads
- Railroad
- County Boundary
- NC State Ports Authority
- National Register Historic District
- Open Water
- Municipal Boundary



Cape Fear Crossing

Figure 2 Study Area

Date: May 2013
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.



TEAC MEETING SUMMARIES



Turnpike Environmental Agency Coordination (TEAC) Meeting

MEETING MINUTES

Date: February 16, 2010
8:30 a.m. To 10:15 a.m.
NCTA Board Room

Project: STIP R-2721, R-2828, and R-2929 – Triangle Expressway Southeast Extension (Raleigh Outer Loop)

Triangle Expressway Southeast Extension Spotlight:

Attendees:

George Hoops, FHWA
Christopher Militscher, USEPA
Eric Alsmeyer, USACE
Gary Jordan, USFWS
Brian Wrenn, NCDWQ
Travis Wilson, NCWRC
Dolores Hall, NCOSA (via telephone)
Amy Simes, NCDENR
Mickey Sugg, USACE
Missy Pair, NCDOT-PDEA
Derrick Weaver, NCDOT-PDEA
Steve Gurganus, NCDOT-PDEA-HEU
Nilesh Surti, NCDOT-TPM

Dewayne Sykes, NCDOT-Roadway Design Unit
Aketa Emptage, NCDOT-OCR
Neal Strickland, NCDOT-Right of Way Branch
Tony Houser, NCDOT-Roadway Design Unit
Jennifer Harris, NCTA
Christy Shumate, HNTB
Kevin Markham, ESI
Roy Bruce, Lochner
Kristin Maseman, Lochner
Karin Ertl, Lochner
Steve Browde, Lochner
Wendee Smith, Mulkey

Presentation Materials (Posted on TEAC website):

- Agenda
- Revised Section 6002 Project Coordination Plan
- Revised Project Study Area Map
- Scoping Handout
- Community Characteristics Summary
- Draft Preliminary Purpose and Need
- Environmental Constraints Map and Legend
- Swift Creek Critical Watershed Area Map
- Area Socioeconomic Characteristics Maps

Purpose:

Obtain agency scoping comments; discuss preliminary statement of purpose and need.

General Discussion:

The following information was discussed at the meeting:

- **Project Name:** NCTA explained that the project name is under development. “Triangle Expressway Southeast Connector” and “Triangle Expressway Extension” have both been used as project names. The Notice of Intent for the project, which was published in November 2009, referenced the project as the “Raleigh Outer Loop.” NCTA will need to make it clear when the project ROD is filed with EPA that the project’s NOI referenced the earlier name. Regardless of the project name, NCTA will study the full range of alternatives during the NEPA study.
- **Revised Project Study Area:** Lochner presented the revised project study area map, showing the expanded study area boundary. The study area was revised following the December TEAC meeting per USEPA comments. The expanded study area incorporates the Swift Creek Water Supply Watershed area, the Town of Garner, and the NC 42/Clayton Bypass area in Clayton. NCTA stressed that the study area reflects the area within which new location alternatives will be considered. For the purposes of the overall NEPA project, upgrade existing facilities alternatives will be considered throughout the Raleigh area.

NCDWQ has concerns about potential impacts to critical watershed areas by any alternatives developed in these areas. USFWS has concerns about potential impacts to endangered mussel species south of the Lake Benson dam. USEPA asked that the expanded study area boundary be retained rather than reduced to eliminate options that may impact the critical watershed areas.

- **Section 6002 Coordination Plan:** NCTA explained that the Section 6002 Coordination Plan has been revised slightly since the December 2009 TEAC meeting. Revisions were minor editorial changes. USEPA has recently provided input on the Plan to NCTA and this input will be incorporated into another revision. USACE asked that NCTA make every effort to provide agencies with TEAC meeting materials two weeks in advance of meetings where decisions will be required.

Several agencies expressed a desire for the NCTA to follow the NCDOT merger process. Agencies indicated that the merger process allows for concurrent activity on the project while also facilitating linear decision-making, and that the merger process makes it clear what decisions are expected for each meeting. Agencies also indicated that the merger process has been fine tuned through the years through the collaborative work of various agencies and also includes a useful dispute resolution process.

NCDOT noted that the merger process is Section 6002 compliant; however, neither NCDOT nor NCTA is required to follow merger. FHWA noted that NCTA should clearly identification of decision points prior to TEAC meetings. Both Section 6002 and the merger process flow through the same decision points and address the same issues. If new issues arise during either process, they must be addressed by the team. FHWA asked for agency ideas on ways to enhance the Section 6002 process. NCTA and FHWA has considered agencies’ positions on using the merger process versus the Section 6002 process and has elected to continue to use the Section 6002 process in lieu of the merger process.

- **Scoping Handout:** Lochner reviewed this summary of the project, highlighting some of the key project issues that have been identified and noting key environmental constraints. Maps showing the locations of known environmental constraints were also displayed.

USEPA asked for clarification on Limited English Proficiency (LEP) issues with regards to the project. Environmental Justice (EJ) and LEP are covered by two separate Executive Orders. NCDOT Office of Civil Rights asked to be actively included in the development of the project approach relative to EJ and LEP issues.

NCDOT noted that voluntary agricultural districts (VADs) have their own public hearing requirements if they may be directly impacted by the project. NCDOT recommends that VAD hearings be held around the time of the corridor public hearing for the project. NCDOT

recommended that NCTA review Governor Hunt's 1981 Executive Order relative to Soil and Water Conservation District coordination for this project.

USEPA requested that only reasonable preliminary alternatives be brought to the agencies for consideration; options should be kept simple, without excessive crossover connectors and numerous alternative segments.

USEPA inquired about the status of the traffic forecasts for this project since this issue has delayed the project in the past. NCTA responded that the "no-build" traffic for 2035 is complete, and that data are already available for an analysis of a "build" alternative along the protected corridor. This information will be posted to Constructware. USEPA expressed concern about the range of percentage increases in predicted traffic volumes along segments of NC 42.

NCDWQ noted the significance of indirect and cumulative effects (ICE) associated with this project and the potential impacts on the numerous streams in the area. USEPA is also concerned about ICE and the ability of the area to support development from water supply and wastewater treatment capacity perspectives. The project team should collect information on the status of area wastewater treatment plants, including their capacity and permit status. The project team should also obtain information on the new Dempsey Benton wastewater treatment plant on NC 50. NCDOT recommended that a screening ICE report be prepared. NCWRC noted that effective addressing of ICE will require a strong cooperative approach with local governments. USFWS noted that Section 7 will be a major project issue.

- **Purpose and Need:** Lochner summarized the key study area characteristics underlying the need for the project and described preliminary concepts for the project purpose. The project purpose includes a primary goal, improving transportation mobility between areas south and east of Raleigh and areas west and north of the city, as well as other desirable outcomes.

With regards to local government support for the project, which will be an important element of the project need, USEPA expressed concern that local communities in the study area are competing for growth and development with the expressed desire to grow and expand their municipal boundaries. USEPA is concerned that there is not a coordinated effort relative to growth management and the ability of the area to provide public services. USEPA expects serious environmental issues in the project area relative to water supply and wastewater treatment capacity because of this growth competition.

USACE and USEPA noted that Research Triangle Park (RTP) and other areas west and north of Raleigh are not the only employment centers/trip destinations in the area; there are other strong trip attractors. USACE noted that this project provides connectivity for the entire 540 Loop.

NCDOT suggested that the discussion of project need include a clear explanation about why the Capital Area Metropolitan Planning Organization (CAMPO) has included this project in its Long Range Transportation Plan (LRTP). NCDOT also recommended that economic development not be included in the project purpose and need as a desirable outcome.

- **General:** Future graphics and maps displayed at TEAC meetings should include the date when they were printed or last revised.

NCTA has placed maps showing the locations of protected corridor parcels purchased by NCDOT on Constructware. NCTA has also posted spreadsheets listing details for each of these approximately 30 parcels.

Q&A:

1. *What is the definition of Limited English Proficiency?*

LEP individuals are unable to speak, read, or write in English. Project materials must be translated into another language if either 5% of the individuals in a community or 1,000 individuals in the community are classified as LEP.

2. *What is the large historic site shown on the constraints map on Old Stage Road just north of the protected corridor?*

It is the Williams Crossroads site; it was placed on the State Study List but is not currently listed on the National Register.

Previous Action Items:

- TEAC members will provide to NCTA comments on the draft Project Coordination Plan and the draft study area.
- Lochner will update the draft project study area boundary and NCTA will provide copies of updated maps. (*Completed*)
- NCTA will determine the protective status of the Swift Creek watershed. (*Completed*)
- NCTA will provide details of parcels acquired by NCDOT under corridor protection; details will include acreage, location, and, if possible, purchase price. (*Completed*)

New Action Items:

- Agencies to review scoping handout and constraints mapping and provide to NCTA information about additional environmental issues and constraints.
- NCTA/FHWA to review process for agency coordination.
- Lochner will add STIP project R-2609 (US 401) to the list of other projects in the study area.
- Lochner will contact NCDOT Office of Civil Rights to coordinate on LEP and EJ considerations and analysis for the project.
- NCTA/Lochner will coordinate with County Soil and Water Conservation Districts.
- NCTA will place completed traffic forecast and analysis reports to Constructware.
- Lochner will collect information on study area wastewater treatment plants.

Resolutions:

- None

Next Steps:

- NCTA will continue to develop project purpose and need. Continue to consider potential adjustments to the draft study area boundary; begin to consider scoping issues.
- Develop Community Characteristics Report.
- Public workshops to be held in summer 2010.

MEETING MINUTES

Date: February 16, 2010
10:30 A.M. To 12:30 P.M.
NCTA Board Room

Project: STIP U-4738 – Cape Fear Skyway

Attendees:

George Hoops, FHWA
Chris Militscher, USEPA
Mickey Sugg, USACE
Brad Shaver, USACE
David Wainwright, NCDENR-DWQ
*Ron Sechler, NMFS
Gary Jordan, USFWS
Travis Wilson, NCWRC
Steve Sollod, NCDCM
Mike Kozlosky, WMPO
Steve Gurganus, NCDOT
Amy Simes, NCDENR
Brian Wrenn, NCDENR - DWQ

*Benjetta Johnson, NCDOT
Nilesh Surti, NCDOT
Dewayne Sykes, NCDOT
Missy Pair, NCDOT
Jennifer Harris, NCTA
Tracy Roberts, HNTB
Kevin Markham, ESI
Steve Browde, Lochner
Wendee Smith, Mulkey
David Griffin, URS
Kim Leight, URS

**Joined meeting via telephone*

Presentation Materials (Posted on TEAC website):

- Agenda
- Project PowerPoint Presentation
- Draft Purpose and Need Statement
- Draft Project Study Area Map (included in Draft Purpose and Need Statement)
- Draft Section 6002 Project Coordination Plan

Purpose:

The purpose for the TEAC meeting was to present a brief project history, an overview of the Draft Section 6002 Coordination Plan, the draft project study area, Draft Purpose and Need Statement, the alternatives screening methodology, preliminary alternative concepts, and to solicit comments and/or Issues of Concern on these issues from TEAC members.

General Discussion:

The following information was discussed at the meeting.

- Jennifer Harris began the meeting with introductions and presenting the agenda. The agenda items were as follows: Project Overview, Draft Section 6002 Coordination Plan, Draft Project Study Area, Draft Purpose and Need Overview, Draft Alternatives Screening Methodology, Draft Alternative Concepts, and Wrap Up/Next Steps. Jennifer Harris then asked Mike Kozlosky if he wanted to make any opening remarks. Mike Kozlosky said that the project was a very important and valuable project to the Wilmington area and local governments and that there is tremendous interest in moving it forward. He added that the importance of the project was underscored by the Wilmington Urban Area Metropolitan Planning Organization (WMPO) having passed a resolution to adopt a corridor protection map for a proposed northern alternative. Jennifer Harris then turned the meeting over to David Griffin.
- **Project Presentation:** David Griffin gave a presentation to introduce the project and provide background information. Printed copies of the PowerPoint slides were provided to meeting attendees. Highlights of the presentation were as follows:

- A project overview outlining some of the activities that had taken place since the agencies last met on the project on January 13, 2006 was provided. He provided a few milestone dates including the Cape Fear Skyway being identified as a candidate toll road in 2005; an agency scoping meeting was held on January 13, 2006; public meetings were held April 10 and 11, 2006; the Notice of Intent was published May 11, 2006 and preliminary financial analyses were conducted in 2007.
- The Draft Purpose and Need Statement had undergone a number of reviews and revisions.
- Numerous stakeholder meetings had taken place including coordination with the Port of Wilmington, Progress Energy, Snee Farm, Brunswick Forest, Wilmington Chamber of Commerce, NC Coastal Land Trust, towns, counties, and others.
- According to the Wilmington Urban Area 2030 Long Range Transportation Plan (LRTP) the project is planned as a multi-lane facility with a high-level bridge spanning the Cape Fear River. It is planned to serve multiple users including the Port of Wilmington, military, commuters and tourists.
- The Federal Highway Administration's (FHWA) determination is that an Environmental Impact Statement would need to be prepared to address the National Environmental Policy Act (NEPA).
- The Draft Section 6002 Coordination Plan was reviewed, and sections pertaining to the project schedule (noting that it will be re-evaluated), agency roles and contacts, purpose and need, alternatives screening, and permitting were highlighted.
- The draft project study area was reviewed and how it evolved. The initial study area was developed based on a terminus at proposed I-140 and US 17 heading eastward on new location to US 421 in New Hanover County. The study area was then expanded to include an upgrade alternative(s) along existing US 17. The study area was expanded again to include a western terminus along proposed I-140 north of US 17.
- The needs of the Cape Fear Skyway include: traffic capacity deficiencies, inconsistency with the regional transportation corridor vision, and North Carolina Port access. He reviewed the project purpose included in the Draft Purpose and Need Statement.
- The alternatives screening process and range of preliminary alternatives to be considered include the no-build alternative, mass transit, multi-modal options, transportation systems management, travel demand management, improving existing roadways, new location options, and hybrids or combinations of new location and improve existing roadway alternatives.
- The alternatives screening methodology was also discussed. He noted that all alternatives that meet the Purpose and Need will be retained for further study. Alternatives recommended by the agencies warranting further study will also be included in the alternatives screening process.
- David Griffin explained that the initial GIS screening is based on criteria to help eliminate certain segments and subsequent corridors from further consideration during the alternatives screening process. He also noted that the methodology used for the Cape Fear Skyway would be similar to that used for the Monroe Bypass/Connector project.

- Preliminary build alternative concepts were reviewed including numerous new location alternatives, improving existing US 17, and the most recent northern alternative identified for corridor protection by local governments.
- The presentation concluded with a review of the next steps in the environmental review process.
- **General Comments and Questions & Answers:**
 - Chris Militscher inquired whether planning to date had taken into consideration the proposed International Port at Southport and its potential effect on local roadways. David Griffin stated that studies for the Cape Fear Skyway will consider the operations of other roadways particularly as they relate to the proposed International Port. Mike Kozlosky replied that the International Port study is still underway and that it is difficult to plan for something for which we have limited information. David Griffin indicated that the Wilmington Port anticipates that it will operate at the same level of service or higher even if the International Port is built. Mike Kozlosky emphasized that it was his understanding as well that the Wilmington Port would operate at the same level as it does today, even with the new International Port. Chris Militscher stated that the Wilmington Port is not operating at full capacity. He inquired whether the existing Wilmington Port would accommodate “super container” ships. He added that the International Port would likely kill the current Wilmington Port due to phasing out of smaller boats. David Griffin replied there are separate uses and both Ports are predicted to have steady growth. He said that the International Port would likely serve container ships while the Wilmington Port would serve bulk and break-bulk cargo. Chris Militscher would like this considered in the study and will forward Port data to David Griffin for review. David Griffin added that the North Carolina Department of Transportation (NCDOT) Program Development Branch was currently conducting a feasibility study to evaluate the existing road network in the vicinity of the proposed International Port (i.e., NC 133, NC 87, and NC 211) to identify improvements needed for the International Port.
 - The agency members discussed the alternatives screening methodology. Chris Militscher inquired whether mass transit would be one of the alternatives, and David replied that mass transit would be analyzed but would likely be screened out early because it would not meet the Purpose and Need of the project. Chris Militscher said an option should be to look at the CATS model, a process completed in South Carolina for the I-73 project. Travis Wilson replied that that study was very detailed and we probably can’t accomplish that level of detail with this project. Chris Militscher added the process was not perfect but was effective. Chris Militscher is concerned about specific screening criteria and the potential use of a weighting system. The agencies agreed they would like more details on the methodology. The alternative screening methodology will be reviewed at future TEAC meetings as the study process evolves. Jennifer Harris asked how the alternatives screening process could ensure that human environment concerns were receiving equal treatment. Information about environmental justice communities and executive orders assist with protecting the human environment but only laws can be enforced such as legislation associated with the National Environmental Policy Act (NEPA) and Waters of the US.
 - Travis Wilson asked what the final goal for the GIS screening was. David discussed alternative concepts and said there were many variations of alternatives. He also said that both quantitative and qualitative approaches would be used screen out alternatives.
 - The agencies agreed they would like more details on the alternative screening methodology. Jennifer noted that all agencies and local governments (municipalities and WMPO) would be involved in the selection and implementation of the methodology for alternatives screening.

- George Hoops stated that we are following the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) Section 6002 environmental review process. This process is intended to promote and enhance opportunities for coordination with the public and with other federal, state and local government agencies during the project development process. Travis Wilson added that there should be cooperation across the board to end up with a “best fit” alternative. Chris Militscher said a longer process gave resource agencies more time to raise any red flags that may prevent a permit being issued. George Hoops said that the Section 6002 process defines roles and responsibilities of participating agencies including such activities as 1) participating in the NEPA process at the earliest possible time, with development of the purpose and need statement, range of alternatives, methodologies, and the level of detail for the analysis of alternatives and 2) identifying, as early as practicable, any Issues of Concern regarding the project’s potential environmental or socioeconomic impacts.
- Steve Sollod inquired whether invitation letters had been mailed to participating and cooperating Agencies. Tracy Roberts replied that they had not but would be soon.
- Jennifer Harris began a discussion regarding corridor protection and study area development. The agencies then engaged in discussion regarding a recently passed resolution by WMPO depicting an alignment for the proposed project developed for corridor map adoption. Jennifer Harris explained that the local resolution is separate from NCTA’s study or the future results of the alternatives and environmental analyses. The resolution is merely a result of the WMPO and Brunswick County doing their job to prevent development within a reasonable new location corridor. Mike Kozlosky stated that the area is rapidly developing and if a corridor is not protected, displacements associated with the Cape Fear Skyway would be of the magnitude such that the project as envisioned in local plans might not be built. Chris Militscher stated he was concerned the locals are not putting enough importance on natural resources. Jennifer Harris noted that other alternatives would be looked at, including upgrading existing US 17.
- Steve Sollod asked about potential corridors further south of the draft project study area. David Griffin said alternatives further south could result in impacts to the Town Creek ecosystem where there are several listed protected species, high quality wetland habitat, and NC Coastal Land Trust properties.
- Steve Sollod inquired if the Cape Fear Skyway would divert traffic from the Cape Fear Memorial Bridge which has a sufficiency rating of about 35. Jennifer Harris replied that to the best of her knowledge the sufficiency rating is 50 and the bridge is not susceptible to closure anytime soon. *(Note: It was subsequently confirmed with the NCDOT Bridge Management Unit that the sufficiency rating is 35.8 as of March 26, 2009).* If the Cape Fear Skyway were to be constructed, it is expected that some traffic otherwise using existing facilities, such as US 17/US 17 Business and US 74/76, would shift to the Cape Fear Skyway.
- Chris Militscher inquired about toll road aspects including costs and available funding. Steve Sollod also asked if funding for the project would be completely covered by toll revenues. Jennifer Harris replied that this was not the case for other NCTA projects and would not be for the Cape Fear Skyway either. She added that several funding sources would be needed in addition to toll revenues. Steve Sollod asked whether the \$1.1 billion cost is accurate – Jennifer Harris said it is hard to say as value engineering would occur as the project development process continues. Jennifer Harris said we need transportation solutions that make sense – no alternative is off the table yet.

- Mickey Sugg said the purpose and need are key to the project. He inquired whether traffic modeling was going to be based on current traffic counts and stated that the traffic studies should focus on the bottleneck points. Jennifer Harris explained that traffic models are calibrated to actual traffic counts and forecasts are developed accordingly.
- Discussion ensued regarding use of the existing US 17 alignment for improvements. Chris Militscher said that there was an 18-acre site on the east side of the Cape Fear River near the Cape Fear Memorial Bridge that had recently undergone major (\$7 million) environmental cleanup. The site is adjacent to the Colonial tank farm and could possibly be used for part of the Cape Fear Skyway if needed. Mickey Sugg replied that he knew of no resources on the east side of the river that would provide environmental constraints. David reviewed the historic districts and low income/minority communities on the east side of the river that could be a concern. Further studies would be needed.
- Chris Militscher inquired about the amount of residential and golf course development within Brunswick Forest. David Griffin identified those areas on the map and noted that golf course development is limited to the southern portion of Brunswick Forest. Steve Sollod said that a precedent had been set for splitting neighborhoods with major roadway projects (example being I-540 in Wake County). Chris Militscher said that future neighborhoods are not tangible concerns. Mike Kozlosky stated that in the past commitments were made to minimize / mitigate impacts to communities such as Snee Farm and Stoney Creek, as well as Brunswick Forest.
- Regarding the northern alternative for corridor preservation, Chris Militscher stated that there were lots of wetlands in the proposed US 17/Cape Fear Skyway interchange area. Jennifer Harris added that no alternatives were off the table for the project and that additional detailed studies would be undertaken to identify environmental resources.
- Steve Sollod asked whether wetlands would be assessed using the North Carolina Wetland Assessment Method (NCWAM). David Griffin said that acceptable methodology would be employed when technical studies are conducted for the alternatives chosen for detailed studies. Brad Shaver replied that NCWAM training is on-going now. David Wainwright added that aquatic resources would need some level of field verification for the GIS screening. Chris Militscher said the best source of data would be from NCWAM – one of the best wetland assessment methods in the country. Mickey Sugg added that it is also a rapid assessment method.
- Ron Sechler added that all alternatives may impact Essential Fish Habitat (EFH) and asked when this assessment would occur. Jennifer Harris replied that EFH would be addressed in the draft environmental impact statement after selection of detailed study alternatives. Ron Sechler added that Fritz Rohde will be the National Marine Fisheries Service point of contact. NCTA will coordinate with the NC Division of Marine Fisheries to determine the primary point of contact.
- Brad Shaver suggested that Military Ocean Terminal Sunny Point (MOTSU) should be added to the list of stakeholders, primarily due to the potential crossing of their railroad. David Griffin responded that that there has been coordination to date and that coordination with MOTSU would continue.
- David Wainwright inquired about the current schedule for Wilmington Bypass. Mike Kozlosky responded that:
 - Section A is in Design-Build and the bid opening is today (February 16, 2010).
 - Section B will begin right of way acquisition within the next few years.
- Brad Shaver added this was a lot of information to process at one time and asked whether the project should follow the merger process. Jennifer replied that NCTA is using

a coordination process similar to the merger process, but without required signatures for each of the major milestones.

- The schedule for the next TEAC meeting was discussed. Chris Militscher said that there was not enough time to make comments on the draft alternatives screening methodology before a March meeting. David Griffin indicated that the most critical items include comments on the draft project study area, Draft Purpose and Need Statement, and the Draft Section 6002 Coordination Plan. Chris Militscher thought that he might have some initial thoughts on the draft alternative concepts by the April 13, 2010 meeting.

Previous Action Items:

- None

New Action Items:

- Agencies will provide comments on the Draft Section 6002 Coordination Plan and the draft project study area by March 9, 2010.
- Agency comments and Issues of Concern on the Draft Purpose and Need Statement, draft alternative concepts, and draft alternatives screening methodology will be discussed at the April 13, 2010 TEAC Meeting.
- Additional information regarding the alternatives screening methodology will be provided by NCTA at the April 13, 2010 TEAC Meeting.

Resolutions:

- None

Next Steps:

- The next TEAC meeting for the Cape Fear Skyway will be April 13, 2010.

MEETING MINUTES

Date: February 16, 2010
1:30 pm to 3:00 pm
NC Turnpike Authority Board Room

Project: STIP U-3321 Gaston E-W Connector – STP-1213(6)

Gaston E-W Connector Spotlight:

Attendees:

Jennifer Harris, NCTA
George Hoops, FHWA
Liz Hair, USACE
Mickey Sugg, USACE
Chris Militscher, USEPA
Marella Buncick, USFWS
Polly Lespinasse, NCDWQ
Marla Chambers, NCWRC
Steve Lund, USACE
Amy Simes, NCDENR
Dewayne Sykes, NCDOT-RDU

Anne Gamber, NCDOT-Hydraulics Unit
Dan Grissom, NCDOT-Division 12
Missy Pair, NCDOT-PDEA
Kristina Solberg, NCDOT-PDEA
Jeff Dayton, HNTB
Jill Gurak, PBS&J
Carl Gibilaro, PBS&J
Michael Gloden, PBS&J
Elizabeth Scherrer, PBS&J
Scott Lane, Louis Berger
Steve Browde, HW Lochner

Presentation Materials (Posted on TEAC Website):

- Meeting Agenda
- Information Package for TEAC Meeting (dated February 16, 2010)
[Note that the information in the packet regarding results of the November 2009 Schweinitz's sunflower surveys was updated just prior to the TEAC meeting. Any packet downloaded from Constructware prior to February 15, 2010 does not include the correct information regarding the Schweinitz's sunflower (Section 7 of the packet).]

Purpose:

Discuss and achieve concurrence regarding the NEPA/404 Merger process Concurrence Point 4a – avoidance and minimization of impacts to jurisdictional resources.

Discussion:

Ms. Harris opened the meeting with introductions and a review of the agenda.

- **Design Refinements and Service Roads.** Ms. Gurak reviewed the information contained in the meeting packet. The summary table on page 26 of the packet summarizes that the refined preliminary design for the Preferred Alternative (including service roads) resulted in reductions of 9,861 linear feet (lf) of impacts to perennial streams (approximately 25% lower), 2,718 lf to intermittent streams (approximately 27% lower), and 0.48 acres of impacts to wetlands (approximately 6% lower).

Additional jurisdictional resource surveys were conducted for areas of the refined preliminary design and for areas of the service roads that were outside the originally surveyed corridor boundaries. These surveys were conducted in November 2009.

Ms. Gurak summarized each design refinement and service road included in the packet. Comments or questions are noted below.

a. Reduce Median by 20 feet and Revise Typical Section

There were no comments or questions. Attendees were pleased with the decision to reduce the median by 20 feet.

b. Modify Access to Matthews Acres Subdivision

There were no comments or questions about this design refinement.

c. Retain the US 29-74 Interchange

There were no comments or questions about the decision to retain the US 29-74 interchange, as documented in the information packet.

d. Modify the Forbes Road Grade Separation

Ms. Gurak explained that the Forbes Road grade separation originally was realigned to avoid a potential population of Schweinitz's sunflower. However, based on additional verification efforts (a check of the roots of the plants in February 2010), the population is not Schweinitz's sunflower, which has a distinctive root. The refined design avoided impacts to Stream S148 (71 lf) and was retained as part of the project. Ms. Gurak noted that the tighter curve used in the refined design is still consistent with the roadway's posted speed limit of 45 miles per hour (mph).

e. Compress the Robinson Road Interchange

Mr. Sykes asked why the proposed improvements along Robinson Road extended farther north in the refined preliminary design compared to the original preliminary design when the ramps were shifted south. PBS&J did not know the answer. *Post-meeting follow-up with PBS&J roadway designers indicated that Robinson Road was shifted slightly more to the east than under the original preliminary design to avoid impacts to the parcel in the northeast quadrant, resulting in the additional length of improvements.*

f. Eliminate the Bud Wilson Road Interchange

Attendees were pleased that the interchange could be removed from the project. A question was asked about impacts to Stream S183. Impacts to this stream were reduced from 1,474 linear feet to 707 linear feet. Additional reductions to the segment of the stream that is parallel to the mainline might be achieved during final design.

g. Compress the NC 274 (Union Road) Interchange

A question was asked about the impacts to Stream S235. The impacts are due to a service road, which was discussed later in the meeting (see service road discussion).

h. Relocate Tucker Road Connection to Canal Road

Ms. Gurak explained that the Tucker Road connection originally was shifted to avoid a potential population of Schweinitz's sunflower. However, based on additional verification efforts (a check of the roots of the plants in February 2010), the population is not Schweinitz's sunflower, which has a distinctive root. The refined design avoided impacts to the fringe of the South Fork Catawba Creek floodplain and was retained as part of the project.

Ms. Lespinasse asked if buffer impacts were considered based on the full pond elevation. These impacts are listed in Table 9 of the meeting packet. The refined preliminary design has less impacts on Catawba River buffers (approximately 12,500 square feet [0.28 acre]) than the preliminary design shown in the Draft EIS. Buffer impacts were calculated based on the full pond elevation of 569.4 MSL.

i. Realign Mainline to Avoid Optimist Club Recreation Fields and Provide Access to NC 273 (Southpoint Road)

There were no comments or questions about this design refinement.

j. Reconfigure the NC 273 (Southpoint Road) Interchange to Avoid Historic Boundaries of Mt. Pleasant Baptist Church Cemetery

There were no comments or questions about this design refinement. Ms. Gurak noted that the design refinements in the northwest quadrant of the interchange are not completed. It was anticipated that the refinements would not result in changes to jurisdictional resource impacts.

k. Relocate Boat Club Road Connection North of Mainline to Southpoint Road

There were no comments or questions about this design refinement. Ms. Gurak noted that this access road likely would change or be eliminated with the new interchange design at NC 273 (Southpoint Road).

I. Reconfigure the I-485 Interchange and Dixie River Road Interchange

The reconfiguration of the interchange shifted it north and reduced the right of way. With these changes, the Preferred Alternative avoids taking right of way from Berewick Regional Park. However, Ms. Harris stated that the reconfigured interchange would result in a direct take of the Dixie Community Center on Garrison Road. This direct take of the Dixie Community Center will likely need to be mitigated, and this will be included as a project commitment in the Final EIS. Ms. Harris stated that at a meeting with the Charlotte-Douglas International Airport (CDIA) on January 19, Mr. Orr, Director of the CDIA, offered to conduct a review of the land CDIA owns in the I-485 area for possible donation as a site for a community center.

Mr. Militscher asked for a description of the building and how often the community uses the facility. Ms. Gurak replied that the land and facility are owned by St. John's Baptist Church and are leased by the Dixie Community Association. The facility is used about once per month, sometimes less frequently, for community gatherings. The building is cinderblock and in fair condition. There is a small kitchen and a bathroom. Below are photos of the community center sign on Garrison Road and of the building.



- **Service Roads.** The draft service road study identified fifteen preliminary service roads for providing access to landlocked parcels. Five of these service roads, as currently designed, would impact jurisdictional resources, as summarized in Table 8 of the information packet. These five service roads (Service Roads 1, 2, 3, 4, and 9) were discussed.

Mr. Militscher asked that Service Roads 1 and 9 be reviewed during final design to determine if they could be realigned to avoid or minimize impacts, and if measures such as steeper fill slopes and guard rails could be used to reduce the service road footprint.

Ms. Buncick asked about control of access along the service roads. Mr. Grissom replied that there would be no access control, but driveway permits would be needed. Larger developments would be required to conduct traffic impact studies, as they would normally. The service roads are two lanes wide and have a design speed of 30 mph, so they are not high capacity roadways.

- **Schweinitz's Sunflower.** The design areas outside the original study corridor boundaries also were surveyed for Schweinitz's sunflower in November 2009. The surveys were conducted just outside the typical survey window for this species. Three potential Schweinitz's sunflower populations were identified. On February 11, 2010, PBS&J biologists revisited these populations to inspect the roots of the plants. Prior to the inspection of the roots, PBS&J coordinated with Dale Suiter, botanist in the USFWS Raleigh field office, to confirm the roots could be exposed without first obtaining a permit (they can). Based on the inspection of the roots, the three potential populations of Schweinitz's sunflower have been determined to not be Schweinitz's sunflower.

Ms. Buncick requested that these three populations be reverified this spring. In a conversation after the TEAC meeting, Ms. Buncick also recommended that NCTA conduct surveys for

Schweinitz's sunflower throughout the entire Preferred Alternative corridor since the last surveys were conducted in 2005. If no Schweinitz's sunflowers are identified in this second survey, then no further surveys will be required.

- **Conceptual Mitigation Plan and EEP Coordination.** Ms. Harris stated that NCTA has been coordinating with NC Ecosystem Enhancement Program about mitigation for the Gaston East-West Connector. Environmental resource and regulatory agencies have expressed concerns regarding the provision of mitigation for this project due to the amount of impact (including impact to 303d-listed streams), and the size of the project. They would like to have the mitigation provided as close to the project area as practicable. Ms. Harris stated that a meeting with EEP, USACE, USEPA, NCDWQ and others to discuss mitigation for the project is scheduled for the afternoon of March 16. NCTA realizes the unique nature of this project and desires to work with the agencies to develop a realistic and acceptable mitigation plan.

The information packet for the meeting includes a summary of an on-site mitigation search conducted for the Preferred Alternative. Mr. Sugg asked if the property owners of the three sites included in the packet have been contacted. Mr. Gloden stated that they were not contacted, but that the owner of Site 1 (Linwood Springs Golf Course) was on site and discussed the project with him. This owner was interested in discussing mitigation, but that any mitigation would need to avoid interfering with golf course operations.

Ms. Chambers noted that the on-site mitigation search did not consider sites with less than 2,000 linear feet of stream or 2 acres of wetlands. Mr. Gloden noted that this is unofficial guidance from EEP. It is generally not cost effective to conduct mitigation activities on sites of smaller size. Mr. Sugg agreed.

Ms. Buncick asked about on-site stream relocation opportunities. Mr. Gloden stated that since the designs are preliminary, on-site stream relocations were not identified in the on-site search, but there could be some opportunities based on their initial review of the designs.

- **Conclusion.** Attendees were satisfied with the information contained in the packet and were complimentary of the details and format of the packet. All agencies in attendance believed that sufficient avoidance and minimization efforts were presented. EPA requested that a note be included on the Concurrence Point 4a form that additional minimization efforts will be conducted for Service Road 1 (connects properties on Shannon Bradley Road to Delta Drive north of I-85) and Service Road 9 (connects properties on Crawford Road to NC 274 (Union Road)).

The note regarding the service roads was added to the Concurrence Point 4a form. The form was signed by NCTA, FHWA, NCDOT, USFWS, NCDWQ, WRC, and USACE. USEPA noted they are still being directed by their legal department to not sign concurrence forms for the project until the air quality conformity issues for the region are resolved.

New Action Items:

- USEPA will provide a memo explaining their continued inability to sign the concurrence form due to air quality conformity issues.
- NCTA will forward the Concurrence Point 4a form to agencies not in attendance at the meeting (GUAMPO, MUMPO, and SHPO) for their signatures.
- NCTA will coordinate with those agencies interested in attending the March 16 meeting to discuss stream and wetland mitigation for the Gaston East-West Connector. NCTA will also suggest that EEP invite someone from their regional office in Asheville.

Resolutions:

- Concurrence was reached on Concurrence Point 4a – avoidance and minimization of impacts to jurisdictional resources.

MEETING MINUTES

Date: February 16, 2010
3:15 PM to 4:30 PM
NCTA Board Room

Project: STIP R-3329/R-2559 Monroe Connector/Bypass – STP-NHF-74(90)

Monroe Connector/Bypass Spotlight:

Attendees:

George Hoops, FHWA
Chris Militscher, USEPA
Liz Hair, USACE
Mickey Sugg, USACE
Marella Buncick, USFWS
Marla Chambers, NCWRC
Polly Lespinasse, NCDWQ
Amy Simes, NCDENR
Jennifer Harris, NCTA
Christy Shumate, HNTB
Carl Gibilaro, PBS&J

Jill Gurak, PBS&J
Michael Gloden, PBS&J
Brad Allen, PBS&J
Michael Wood, Catena Group
Tim Savidge, Catena Group
Jenn Callahan, Catena Group
Ken Gilland, Michael Baker Eng

Presentation Materials (Posted to TEAC website):

- Agenda
- Monroe Connector/Bypass Avoidance and Minimization Overview

Purpose:

Distribute Quantitative ICE Land Use Study and ICE Water Quality Analysis; provide update on the preparation of the Biological Assessment; discuss avoidance and minimization efforts for the Preferred Alternative.

The following information was discussed at the meeting:

General Discussion:

The following information was discussed at the meeting:

- **Quantitative ICE Land Use Study and ICE Water Quality Analysis:** NCTA is completing the Draft Indirect and Cumulative Effects Quantitative Analysis (land use study) and the draft Water Quality Analysis. These will both be distributed as soon as they are ready. *[NOTE: Draft Indirect and Cumulative Effects Quantitative Analysis was distributed on February 19, 2010 and the Water Quality Analysis was distributed on February 26, 2010.]*

Preliminary results shared in the past have not changed. There is minimal difference in growth potential between the No-Build and Build scenarios.

Baker was asked to compare the 2002 ICE report to theirs, and document why it was different. It was determined that:

- Much of the existing growth had not yet started
- Existing and future land uses were different
- New regulations are now in place regarding growth and the methodologies used for the current study is slightly more elaborate.

It was requested by USFWS that the Quantitative ICE report be available for review prior to the submittal of the Biological Assessment.

- **Update on Biological Assessment:** A single Biological Assessment addressing all federally-protected species – freshwater mussels/habitat and plants – is currently being drafted. It is anticipated that this document will be distributed in late March 2010.
- **Avoidance and Minimization Efforts of the Preferred Alternative:** Revised impacts were presented that reflect design changes made to the project as a result of public and agency comments on the Draft EIS and Corridor/Design Public Hearing to avoid and minimize impacts. Agencies suggested that NCTA include avoidance and minimization efforts already included in the Draft EIS. This includes six bridges committed to in Section 4.7.3 of the Draft EIS and listed in the Avoidance and Minimization Overview Handout. It was agreed that the table included as part of the Avoidance and Minimization Overview will be revised to more clearly document the impact savings associated with the inclusion of these bridges.

Questions arose regarding the impacts associated with the design change at Secret Shortcut Road crossing. The impacts for this area will be reexamined to ensure they are accurate and will be reflected in the revised Avoidance and Minimization Overview.

It was stated that a detailed package was prepared for the avoidance and minimization effort for the Gaston project, and it was suggested that a similar effort be prepared for this project. It was suggested that the project team look closely at the impact numbers. For instance, all impacts, including those associated with service roads were calculated to slope stake limits plus a 40-foot buffer. In the case of service roads, this may be a gross overestimation of the impacts.

Current Avoidance and Minimization considerations did not consider a reduced typical section, nor will it be considered as part of the NEPA analysis. However, a commitment will be made in the Final EIS for the design-build process to reduce the median width to 50 feet.

- **Project Schedule:** The Final EIS schedule will continue to move forward concurrent to the Section 7 coordination. The Final EIS will include a commitment that the Section 7 coordination will be completed prior to the Record of Decision. Currently the Record of Decision is scheduled to occur in June or July of this year to allow enough time to apply for and receive Build America Bonds which could result in a \$30 million savings in project financing.

Q&A:

1. *How were the wetland and stream impacts calculated?*
Impacts were calculated to 40 feet beyond the slope stake limits, consistent with NCDOT guidance for calculating impacts on functional level designs.
2. *How many service roads are being proposed? Can we review the locations of the service roads? Why are service roads being considered so much earlier than in the Gaston East/West Connector project?*
Yes. A Service Road Study has been prepared and will be posted to the TEAC website. The locations of service roads are also included in the Final EIS. A service road study is underway for the Gaston E-W Connector project.
3. *Do any of the bridge structures allow for a single structure rather than dual structures?*
At this time, the current designs are not far enough along to commit to that. This can be considered during final design in the design-build process.

Previous Action Items:

- NCTA will continue to provide updates to agencies on status of quantitative ICE.
- NCTA will provide copies of the Hartgen methodology – Highways and Sprawl in North Carolina (David T. Hartgen, Ph.D., P.E.) and Hartgen report references from NCDOT's *Guidance on Indirect and Cumulative Impact Analysis*.
[Posted to TEAC website on November 11, 2009.]
- NCTA will provide a list of projects from the MUMPO 2035 LRTP that are in the FLUSA.
[Posted to TEAC website on November 11, 2009.]
- Agencies should provide additional questions, concerns, or suggestions for methodologies and assumptions being used to complete the quantitative ICE to NCTA.

New Action Items:

- NCTA will provide documentation of reduced stream and wetland impacts resulting from the October 2008 bridging discussions, figures of service roads where stream impacts are present, and figures of design changes similar to what was prepared for the Gaston project.
[Posted to the TEAC website on March 22, 2010.]
- NCTA will distribute the Draft Indirect and Cumulative Effects Quantitative Analysis (land use) and Water Quality Analysis reports as soon as they are available.
- *[Draft Indirect and Cumulative Effects Quantitative Analysis distributed on February 19, 2010; Water Quality Analysis distributed on February 26, 2010.]*
- Agencies review Draft Indirect and Cumulative Effects Quantitative Analysis and Water Quality Analysis reports and provide comments to NCTA by April 13, 2010.

Resolutions:

- None.

Next Steps:

- Next meeting is scheduled for April 13, 2010.



Turnpike Environmental Agency Coordination (TEAC) Meeting

MEETING MINUTES

Date: April 13, 2010
10:00 A.M. To 12:00 P.M.
NCTA Board Room

Project: STIP U-4738 – Cape Fear Skyway

Attendees:

George Hoops, FHWA
Scott McLendon, USACE
Brad Shaver, USACE
David Wainwright, NCDENR-DWQ
Fritz Rohde, NMFS
Gary Jordan, USFWS
Travis Wilson, NCWRC
Steve Sollod, NCDCM
*Mike Kozlosky, WMPO
Steve Gurganus, NCDOT
*Jessie O'Neal, NCDENR - DMF
*David Lane, NCDENR - DCM

Lonnie Brooks, NCDOT
Dewayne Sykes, NCDOT
Stephanie Ayers, NCSPA
Mark Blake, NCSPA
Jennifer Harris, NCTA
Tracy Roberts, HNTB
Jeff Dayton, HNTB
Kevin Markham, ESI
Steve Browde, Lochner
David Griffin, URS
Joanna Harrington, URS

**Joined meeting via telephone*

Presentation Materials (Posted on TEAC website):

- Agenda
- Project PowerPoint Presentation
- Draft Purpose and Need Statement (pages that have been revised per agency comments)
- Revised Draft Section 6002 Project Coordination Plan
- Agency comments and responses to Section 6002 Coordination Plan, Project Study Area, and Purpose and Need Statement

Purpose:

The purpose of the meeting was to discuss comments received from the agencies on the draft Section 6002 Coordination Plan, draft Project Study Area, draft Purpose and Need Statement, and to discuss and receive comments on the draft alternative screening methodology and alternative concepts, and to solicit comments and/or Issues of Concern from Participating Agencies in this regard. Representatives from the North Carolina State Ports Authority (NCSPA) were in attendance to provide an overview of the Port of Wilmington and the proposed North Carolina International Terminal (NCIT).

General Discussion:

The following information was discussed at the meeting.

- Jennifer Harris began the meeting with introductions and a review of the agenda. After this introduction, Jennifer asked if there were any objections regarding changing the agenda to allow Stephanie Ayers, NCSPA, to give her presentation first. With no objections heard, Stephanie Ayers began a presentation on the North Carolina Ports.
- **NCSPA Presentation:** Stephanie Ayers gave a presentation to provide agency members information regarding the NCSPA and the Port of Wilmington, as well as the proposed NCIT and how it relates to the Cape Fear Skyway project. Printed copies of the PowerPoint slides were provided to meeting attendees. Highlights of the presentation and discussion items are as follows:
 - Growth at the Port of Wilmington is continuing, and has not seen a large decline in shipments like other US ports. Future forecasts predict that east coast port traffic will increase because east coast ports will attract larger vessels from Asia and India that will be able to travel through the expanded Panama Canal.
 - The Port of Wilmington currently has infrastructure challenges, including the depth of the navigational channel and vertical clearance issues due to the Progress Energy transmission lines down river from the Port.
 - The Port of Wilmington hosts mainly a truck market, with 30 to 40 percent of trucks traveling along Interstate 40 to Greensboro.
 - The NCSPA owns 100 acres of land north of the Port of Wilmington (on the east bank of the Cape Fear River) and 96 acres of land south (and inland) that are planned expansion areas for the Port.
 - The Port's turning basin in the navigational channel of the Cape Fear River is currently 1,200 feet in diameter, and there are plans to expand the turning basin to 1,400 feet. The current navigational channel is dredged to 42 feet. Fifty feet is needed to support larger vessels.
 - The NCSPA believes a crossing north of the Port of Wilmington (in the vicinity of the existing Cape Fear Memorial Bridge) would be advantageous due to the elimination of navigational clearance issues and excellent Interstate access, but believes a crossing north of the Port could be an obstacle to future development at the Port (if the Port property is traversed). Obstacles with a northern crossing include:
 - Issues with crossing the wide turning basin. A substantially larger main span would be needed to cross the 1,200-foot width of the basin, as well as maintain enough vertical clearance for any vessels that utilize the turning basin.
 - A bridge crossing at this location would not be consistent with the Wilmington Urban Area Metropolitan Planning Organization's (WMPO) 2030 Long Range Transportation Plan (2030 LRTP).
 - Trucks would still have to travel down US 421 to access the south gate of the Port.
 - The NCSPA plans to open the NCIT in Southport, NC that will serve to complement the existing Port of Wilmington. It will be approximately 600 acres with 4,600 linear feet of berth. Jennifer Harris asked about how the opening of the NCIT would affect traffic into the Port of Wilmington. Stephanie Ayers explained that only larger carriers would use the NCIT, and smaller carriers with capacities smaller than 8,000 twenty-foot equivalent units (TEU) would still utilize the existing Port. The NCIT will be expensive to use which will deter the smaller carriers, who will still use the Wilmington port facility. She explained that if the NCIT was not built, the navigational channel to the existing Port would need to be deepened to accommodate larger vessels.

- A discussion was held regarding the size of vessels using the Port and how this would affect the size of a new bridge crossing of the Cape Fear River. Stephanie Ayers explained that the Cooper River Bridge in Charleston, SC has 186 feet of vertical clearance; anything lower than that would likely hamper future vessel activity to the existing Port of Wilmington.
- Jennifer Harris asked about the schedule of the proposed dredging of the Cape Fear River for the NCIT. Stephanie Ayers explained that a feasibility study and Environmental Impact Statement had not been completed yet, but best case would be in the 2017 to 2020 timeline. Fritz Rohde noted that expansion of the navigational channel in the Cape Fear River would have significant impacts to Essential Fish Habitat and fish nurseries.
- The North Carolina Department of Transportation is completing a feasibility study for a new road connector between the NCIT and the interstate. This future facility could be open to traffic in 2017.
- Mike Kozlosky stressed that access to the Port of Wilmington is not the only aspect when considering the need for the Cape Fear Skyway project. There are still substantial traffic capacity deficiencies in the area.
- **Project Presentation:** David Griffin gave a presentation to review the project and review comments received thus far on the draft Section 6002 Coordination Plan, the draft Project Study Area, and the draft Purpose and Need Statement. Printed copies of the responses to these comments by NCTA were provided to meeting attendees. Highlights of the discussion are as follows:
 - Steve Sollod inquired about the logical terminus on the east side of the study area. David Griffin explained that the eastern terminus for all alternatives will be US 421.
 - It was agreed by those in attendance that Issues of Concern will be addressed before moving on with subsequent studies in the project. This will be revised in Section 6.7 of the Draft Section 6002 Coordination Plan.
 - The Draft Section 6002 Coordination Plan will be revised to reflect that NCDENR – Division of Coastal Management and other agencies are involved in the permitting process.
 - Section 11.2.3 of the Draft Section 6002 Coordination Plan will be revised to state that private mitigation banks are available.
 - Section 12.5 in the Draft Section 6002 Coordination Plan will be revised to clarify that the public notice is for LEDPA selection.
 - Brad Shaver commented that the military deployment discussion in the Draft Purpose and Need Statement is not as important, considering there are no troop deployments from MOTSU and most of the traffic which comes to MOTSU arrives via train. David Griffin noted that US 17 is a STRAHNET and part of the National Highway System. A further comment is that movement of military goods is not specifically stated as a project need. Stephanie Ayers noted that the Port of Wilmington is a strategic seaport, and moves military cargo.

Action Items:

- NCTA to send Jessie O'Neal Draft Purpose and Need Statement for review.

- WMPO, NCSPA and USACE to submit comments on the draft Purpose and Need Statement. USFWS and NCWRC will not be submitting comments.
- Agency members to send comments on the Draft Purpose and Need Statement and alternative screening methodology and concepts by 05/04/10.
- NCTA to revise draft Section 6002 Coordination plan and draft Purpose and Need Statement based on additional comments received.

Resolutions:

- None

Next Steps:

- The next TEAC meeting for the Cape Fear Skyway is anticipated to be June 15, 2010.



Turnpike Environmental Agency Coordination (TEAC) Meeting

MEETING MINUTES

Date: September 8, 2010
8:30 a.m. To 9:00 a.m.
NCTA Board Room

Project: STIP R-2721, R-2828, and R-2929 – Triangle Expressway Extension (Raleigh Outer Loop)

Triangle Expressway Extension Spotlight:

Attendees:

George Hoops, FHWA
Eric Alsmeyer, USACE
Gary Jordan, USFWS
Travis Wilson, NCWRC
Deloris Hall, NCDCCR (via telephone)
Doug Taylor, NCDOT-Roadway Design Unit
Jennifer Harris, NCTA
Christy Shumate, HNTB

John Burris, HNTB
Joanna Rocco, URS
David Griffin, URS
Roy Bruce, Lochner
Brian Eason, Lochner
Kristin Maseman, Lochner
Wendee Smith, Mulkey

Presentation Materials (Posted on TEAC website):

- Agenda
- Draft Meeting Minutes – 8/10/10 TEAC Meeting
- Handout 4 – Alternatives Screening, Quantitative Third Tier Screening of Alternative Concepts
- Newsletter #2

Purpose:

Continue discussion on purpose and need statement and alternatives screening.

General Discussion:

The following information was discussed at the meeting:

- **Purpose and Need and Alternatives Screening Methodology:** NCTA has received comments on the draft Purpose and Need Report from NCDENR-DWQ. Comments on both purpose and need and the alternatives screening methodology will be accepted until after the September public workshops. A revised Purpose and Need Report and a draft Alternatives Report will then be completed and made available to agencies, local governments and the public for comments. Other agencies indicated they do not plan to submit written comments and will defer to NCDENR-DWQ's comments.
- **Alternatives Screening:** Lochner summarized the results of the quantitative third tier screening of alternatives carried forward from the second tier screening, which included nine new location alternatives, two improve existing facilities alternatives, and two hybrid new location/improve

existing facilities alternatives. This round of screening included more evaluation criteria and a more detailed examination of impacts than the second round of screening.

USFWS and NCWRC stated that National Heritage Program (NHP) occurrences should not be used in the impacts summary table in Handout 4 because the NHP GIS database is too general to provide useful comparative information. Instead, they suggested that federal and state listed species occurrences would provide more useful comparative information.

The agencies agreed to eliminate Improve Existing Alternative #3 and Hybrid Alternative #3 (each includes upgrading and widening Ten-Ten Road) because each of these would require much larger numbers of relocations than all other alternatives without providing clear advantages. In addition, because Improve Existing Alternative #1 and Hybrid Alternative #1 remain under consideration, viable alternatives are not limited to new location options at this point.

NCTA will discuss with NCDOT Roadway Design staff the nine new location alternatives, Improve Existing Alternative #1, and Hybrid Alternative #1 to identify geometric constraints and other design considerations influencing the further development of these alternatives. After presenting these alternatives to the public at the September workshops, NCTA expects to select Detailed Study Alternatives (DSAs) by November of this year.

- **Section 6002 Cooperating Agency Invitation:** USACE has received the FHWA letter inviting it to be a cooperating agency under the Project Coordination Plan and will sign and return it to FHWA soon.

Previous Action Items:

- FHWA to distribute letters inviting federal agencies to become cooperating/participating agencies under the Project Coordination Plan.
[Letters were distributed on August 17, 2010.]
- Agencies to provide final comments to NCTA on Project Coordination Plan.
[No additional comments were received.]
- NCTA/Lochner to clarify distinction between traffic study area and project study area for alternatives development in Purpose and Need Report.
[Clarification will be included in revised Purpose and Need Report, available by mid-October, after the public workshops.]
- HNTB to review existing and projected traffic for US 401 and consider adding this information to traffic figures in the Purpose and Need Report.
[This information was not included on the initial traffic figures because only segments that experienced more than 10 percent change in traffic between the No-Build and Build scenarios were modeled; however, this traffic information for US 401 will be added for information.]
- Agencies to provide comments on Draft Purpose and Need Report.
[Written comments were received from NCDENR-DWQ. Other agencies indicated that they will not provide additional written comments.]
- NCTA/Lochner to consider revising first tier qualitative screening of alternative concepts to clarify the link between this screening and the measures of effectiveness for project purpose.
[Clarification will be included in draft Alternatives Report, available by mid-October, after the public workshops.]
- NCTA/Lochner to complete third tier qualitative screening of alternatives and present results at September TEAC meeting.
[Handout 4 presented at the September TEAC meeting includes the results of the third tier qualitative screening.]
- Agencies to provide comments on alternatives screening methodology and draft alternative concepts.
[A draft Alternatives Report will be prepared following public workshops in late September and made available for agency and public review and comment.]

New Action Items:

- Lochner to revise alternatives impact table to replace Natural Heritage Program Occurrences as an evaluation criterion with separate breakouts of federal and state protected species.

Resolutions:

- None

Next Steps:

- Public workshops on September 21, 22, and 23, 2010.
- Revise Purpose and Need Report according to agency and public comments.
- Prepare draft Alternatives Report and circulate for agency and public review and comment.

MEETING MINUTES

Date: September 8, 2010
9:45 A.M. To 11:15 A.M.
NCTA Board Room

Project: STIP U-4738 – Cape Fear Skyway

Cape Fear Skyway Spotlight:

Attendees:

George Hoops, FHWA
Scott McLendon, USACE
Brad Shaver, USACE
Fritz Rohde, NMFS (via telephone)
Gary Jordan, USFWS
David Wainwright, NCDENR-DWQ
Brian Wrenn, NCDENR-DWQ
Travis Wilson, NCWRC
Steve Sollod, NCDOT

Mike Kozlosky, WMPO
Stephanie Ayers, NCSPA
Doug Taylor, NCDOT
Jennifer Harris, NCTA
Christy Shumate, HNTB
John Burris, HNTB
David Griffin, URS
Peter Trencansky, URS
Joanna Rocco, URS

Presentation Materials (Posted on TEAC website):

- Agenda
- Project PowerPoint Presentation
- Draft Purpose and Need Statement
- Draft Alternatives Screening Summaries
- Agency comments and responses to Purpose and Need Statement and Alternatives Screening Summaries

Purpose:

The purpose of the meeting was to discuss comments received from the agencies on the draft Purpose and Need Statement and the first and second tier alternative screening summaries, and to solicit comments and/or Issues of Concern from Participating Agencies in this regard.

General Discussion:

The following information was discussed at the meeting.

- URS reviewed the comments received thus far on the draft Purpose and Need Statement. Printed copies of the responses to these comments by NCTA were provided to meeting attendees. Highlights of the discussion are as follows:
 - NCWRC inquired about the truck traffic and if it is now underestimated since the North Carolina International Terminal (NCIT) in Southport, NC is not being built. Stephanie Ayers explained that traffic will probably only increase now that there are no plans for the NCIT. The Port of Wilmington will continue to expand at its existing location, and preliminary studies are currently taking place by the NCSPA regarding traffic projections.
 - NCDENR-DCM inquired about his previous comment regarding the Cape Fear Memorial Bridge and how its replacement could affect traffic movements in the area. URS explained that there will be a number of alternatives for the project, including upgrade existing alternatives that either replace the existing Cape Fear Memorial Bridge, or supplement the existing bridge by providing a new location bridge within close proximity to the existing bridge. If the selected alternative does not involve the replacement of the existing Cape Fear Memorial Bridge (for example the No Build or new location alternative), the NCDOT would need to determine if a replacement bridge would be necessary at some point in the future.

- A discussion was held regarding whether or not consistency with the Strategic Highway Corridor Initiative (and other transportation plans) should be included as part of the purpose statement of the project. It was agreed that this should be a secondary benefit of the project, and will be revised in the Purpose and Need Statement. Mike Kozlosky stressed that the Wilmington Urban Area Metropolitan Planning Organization's (WMPO) Long Range Transportation Plan (LRTP) is supported by the community, and any alternative chosen for detailed study should be consistent with this plan. URS noted that if the parameter to meet the goals of the SHC, Intrastate System and LRTP are moved to secondary needs it will be important to develop performance measures that capture the intent of these plans, because improving traffic flow and providing for better freight movements would need to be explained further such that the alternatives meet the local vision and goals for this corridor.
- It was agreed that the Purpose and Need Statement was ready to be presented to the public.
- URS reviewed the comments received thus far on the draft alternatives screening. Printed copies of the responses to these comments by NCTA were provided to meeting attendees. Highlights of the discussion are as follows:
 - NCSPA inquired whether improvements on the eastern side of the project would be included in designs. David Griffin explained that studies would include an evaluation of the transportation network on the eastern side of the project and associated impacts. If appropriate, identified improvements will be incorporated into functional designs for the Detailed Study Alternatives.
 - USACE suggested that LIDAR data be used as a means to identify wetlands within the corridors studied in the alternatives screening. URS will look into using this information to provide more accurate results regarding wetland impacts during alternative screening.

Previous Action Items:

- Agencies to send comments on the Draft Purpose and Need Statement and alternative screening methodology and concepts by 05/04/10.
[Comments received from USEPA, USACE, NCSPA, NCDENR-DCM, and NCDENR-DWQ]

New Action Items:

- Agency members to send remaining comments on alternative screening methodology and concepts to NCTA.

Resolutions:

- Agreement was reached on the Purpose and Need Statement for the project.

Next Steps:

- Revise Purpose and Need Report according to agency comments.
- Continue alternatives screening process.

MEETING MINUTES

Date: September 8, 2010
12:30 PM to 1:50 PM
NCTA Board Room

Project: STIP R-2576 Mid-Currituck Bridge Study

Mid-Currituck Bridge Spotlight:

Attendees:

Bill Biddlecome, USACE
Scott McLendon, USACE
Brad Shaver, USACE
Gary Jordan, USFWS
Ron Sechler, NMFS (by phone)
George Hoops, FHWA
Cathy Brittingham, NCDENR-DCM
Kevin Hart, NCDENR-DMF (by phone)
Brian Wrenn, NCDENR-DWQ
David Wainwright, NCDENR-DWQ
Travis Wilson, NCWRC
Jennifer Harris, NCTA
Lonnie Brooks, NCDOT-Structure Design
Anne Gamber, NCDOT-Hydraulics Unit
Doug Taylor, NCDOT-Roadway Design
Scott Slusser, NCDOT

Elizabeth Lusk, NCDOT-NEU
Bruce Ellis, NCDOT-NEU
Kathy Herring, NCDOT-NEU
Logan Williams, NCDOT-NEU
Matt Lauffer, NCDOT-Hydraulics Unit
Jose Luque, CDG-ACSID
Bernardo Palicio, CDG-Dragados USA
Jose M De Iturriaga, CDG-Dragados USA
Roy Bruce, CDG-Lochner
Brian Eason, CDG-Lochner
Ron Ferrell, CDG-PBS&J
John Page, PB
Don Brown, PB
Tracy Roberts, HNTB
Max Price, CDG-Wetherill Engineering
Neal Williams, CDG-Weeks Marine
Mark Redderodd, CDG-Weeks Marine

Persons Who Were Provided Materials but Were Unable to Attend:

Christopher Militscher, USEPA
Sara Winslow, NCDENR-DMF

Presentation Materials: (All materials posted on the TEAC website)

- Meeting Agenda
- Reasons for a Determination that ER2 is Not a Practicable Alternative to a Bridge Across Currituck Sound (Handout 25)
- Mid-Currituck Bridge Stormwater Management (Handout 26)
- Construction Methodologies for Mid-Currituck Bridge (Handout 27)
- PowerPoint slides
- Elgin Sweeper Guide

Purpose:

Discuss agency comments on materials distributed at the August 10 meeting, as well as bridge stormwater management, bridge construction, and the practicability of ER2.

General Discussion:

The following information was discussed at the meeting:

- **Big Picture** – PB (John Page) gave a brief description of the steps NCTA is following to provide information needed for selection of a Preferred Alternative. He indicated that in August, funding was discussed, the focus on bridge corridors was narrowed to C1 only, and it was decided MCB2 could not be the Preferred Alternative or Least Environmentally Damaging Practicable Alternative (LEDPA) because its impacts are greater than MCB4, it lacks public support and it could not be funded at this time.

NCTA met with the emergency management officials on August 19th. At this meeting, it was

decided to identify reversing a center turn lane as the preferred hurricane clearance strategy, which is consistent with the comments received during the DEIS comment period on hurricane evacuation from the public and USEPA. Today's meeting addressed stormwater management and construction techniques for a Mid-Currituck Bridge. Next month's meeting will address issues related to Maple Swamp. With regard to avoiding and minimizing NC 12 impacts, NCTA is pursuing an alternative design, which would reduce the amount of four lanes by two-thirds, which has been agreed to by NCDOT Congestion Management, NCDOT Division 1, NCDOT Roadway Design, and emergency management representatives. The change would reduce community impacts and project cost. Groundwater and surface water studies for Maple Swamp are underway. Maple Swamp crossing options will be considered and discussed at the October TEAC meeting. By the October meeting, all the information needed to make a preferred alternative decision should be available.

- **August Meeting Comments** – PB (John Page) noted no written comments on the August 10th meeting have been received. The floor was opened to anyone who had comments they wanted to make regarding that meeting. NCDENR-DCM (Cathy Brittingham) commented on Handout 22, page 3, asking about the status of Currituck County's request for a water pipe under the bridge. NCTA (Jennifer Harris) responded that the county had inquired about the possibility of putting a water pipe on the bridge, but this issue has not progressed beyond the initial inquiry. NCTA cannot fund this and have not agreed to place a water pipe on the bridge. PB (John Page) added that the cost of the bridge would increase just for the added support structure necessary for the water pipe. He also noted that the county indicated that a pipe on the bridge would give them more flexibility in water distribution to respond to drought situations or other emergencies. Water supplies are adequate on the Outer Banks. NCTA (Jennifer Harris) said that the TEAC members would be kept apprised if anything changes with this. NCDENR-DCM (Cathy Brittingham) asked if this would be discussed in the FEIS. NCTA (Jennifer Harris) stated that Currituck County only indicated that it would be useful to have the water pipe on the bridge, but they have not asked again nor given any more information than their initial inquiry.

Other comments were solicited but none were provided. NCDENR-DCM (Cathy Brittingham) said that they had some technical comments on Handout 23 but that she would discuss outside of the meeting.

- **Stormwater on Bridges** – NCDOT (Matt Lauffer) described the *Stormwater Runoff from Bridges* report completed by NCDOT, US Geologic Survey, NC Division of Water Quality, NC State University and others on stormwater runoff considerations on bridges throughout North Carolina. NCDOT (Matt Lauffer) requested the agencies provide to him any preferred focus areas for the study team's planned presentation at the September 23 Interagency meeting. The report is available on the NCDOT website (<http://ncdot.org/doh/preconstruct/highway/hydro/BMP/default.html>). NCDOT (Matt Lauffer) indicated that he could send a copy of the report via e-mail if anyone needed it. Contact him at mslauffer@ncdot.gov.
- **Handout 26** – CDG-Lochner (Roy Bruce) presented a strategy for Mid-Currituck Bridge stormwater management. Research into best practices resulted in finding that frequent bridge deck cleaning with state-of-the-art technology removes most of the pollutants. In the past 10-15 years, vacuum sweepers have improved and do a much better job than they once did. A video was shown of one particular manufacturer of a vacuum sweeper (though no manufacturing company is preferred). The manufacturer says that 90 to 97 percent of pollutants are picked up. The vacuum sweeper meets both PM10 and PM2.5 standards. Based upon the research done, CDG-Lochner (Roy Bruce) believes this vacuum sweeper could be an effective tool, with frequent sweeping (weekly during the 13-week peak season), for the Mid-Currituck Bridge. CDG-Lochner (Roy Bruce) added that where the bridge crosses wetlands on the Outer Banks shoreline, the runoff would be captured and treated. Scuppers allowing direct discharge would be used along the remainder of the bridge. The Virginia Dare Bridge over the Croatan Sound uses the same approach.

The capital cost of this two-fold strategy would be approximately \$1 million. The equipment would be replaced every 10 years. The operating cost of this vacuum sweeper is substantially lower than other options. In addition to being cost-effective, the vacuum sweeper meets the needs and is consistent with the stormwater on bridges report (described earlier by NCDOT [Matt Lauffer]).

NCDENR-DWQ (David Wainwright) asked if the vacuum sweepers lose efficiency over time. The manufacturer claims that as long as the equipment is maintained, they do not lose efficiency. NCTA through a contract with CDG would ensure the equipment is properly maintained and that sweeping occurs on schedule. NCDENR-DWQ (David Wainwright) asked if any debris would be pushed into the scuppers by the vacuum sweeper. CDG-Lochner (Roy Bruce) stated that the manufacturer claims that they do not; the brushes when properly aligned would sweep the debris under the vehicle which would then vacuum up the debris and filter the air so that pollutants are not released into the air. NCDENR-DWQ (David Wainwright) asked if there was any research that was not from the manufacturer. CDG-Lochner (Roy Bruce) indicated he had studies from Seattle, MnDOT, and others. All of the research, however, has been done on city streets where, unlike a bridge, much of the runoff comes from adjoining land use rather than vehicles. NCDENR-DWQ (David Wainwright) raised the concern that whatever is not picked up by the vacuum sweeper goes into the sound. There are other things that affect turbidity and other sensitive natural systems. CDG-Lochner (Roy Bruce) said that research on the water quality effects would be needed. NCTA would be amenable to research opportunities with universities and the agencies. NCDENR-DMF (Kevin Hart) asked about the nature of the three percent of pollutants that would not be picked up by the vacuum sweeper. CDG-Lochner (Roy Bruce) responded that he wasn't sure what those pollutants were but that the frequency of sweeping could be adjusted more or less depending on its effectiveness to maximize what is picked up. He added that the vacuum sweeper would be stored on site at an NCTA facility, so it would be available 24 hours per day to be used by trained professionals so that it could be used at times such as traffic crashes, in advance of storms, etc.

NCDENR-DWQ (David Wainwright) stated that stormwater rules are more stringent now than they were when the other coastal bridges were built. The Currituck Sound is a very sensitive area and is very susceptible to turbidity. The first 1.5 inches of rain water on new built upon area must be retained and treated. NCDENR-DWQ (Brian Wrenn) added that he was familiar with the NCDOT study and that there still would be pollutants left after sweeping that need to be treated. Reading the letter of the law, all of the pollutants should be treated, not just the sensitive wetland areas on the east end of the bridge. He added that the sweeping is a great tool, but there would still be pollutants that would need to be treated.

NCDENR-DWQ (David Wainwright) also stated that water would need to be piped off the bridge on the east and west ends except over open water. There was discussion regarding what was meant by "open water." NCDENR-DWQ (Brian Wrenn) noted that maps would need to be studied to determine where the SAVs are located. NCDENR-DWQ (David Wainwright) stated that bridge piping would need to be extended beyond the coastal marsh and include the SAVs. NCDENR-DWQ (Brian Wrenn) said that while he was in agreement with the concept of partial capture and treatment, the details of what additional piping might be needed still need to be worked out. NCDENR-DWQ will provide comments.

USACE (Scott McClendon) asked if it was required for the pollutants to be collected and treated. NCDENR-DWQ (David Wainwright and Brian Wrenn) answered that it was. NCTA responded that they would be capturing and treating the runoff on the east end of the bridge. NCDENR-DWQ (David Wainwright) asked for clarification on the environmental requirements mentioned on page 6, fourth paragraph of Handout 26. CDG-Lochner (Roy Bruce) explained that with sweeping, it would not be necessary to treat those pollutants since they would be captured prior to being suspended in rainwater and released into the sound. NMFS (Ron Sechler) added that the NCDENR-DWQ comments reflect their concerns as well.

- **Handout 27** – CDG-Lochner (Roy Bruce) presented the construction techniques discussed in Handout 27. The three types of potential construction techniques are barge based, temporary construction trestle, and top down construction. Barge based can only be done in water depths 6 feet or greater. Where there is less than 6 feet of water depth, either temporary construction trestle or top down construction would need to be utilized, or the area would need to be dredged to 6 feet. Pile setup considerations were discussed, and each of the seven options/combinations of construction techniques were presented. Pile setup time heavily influences construction time if top-down construction is used. As each set of piles is placed one must wait 2 to 30 days before the weight of caps and superstructure can be added. With barge and trestle construction, multiple sets of piles can be placed before the cap and superstructure is added. With top down, the foundations must be built in sequence so construction essentially stops during the set-up time, lengthening the construction period.

NMFS (Ron Sechler) asked where the disposal sites would be for dredging spoil. CDG-Lochner (Roy Bruce) stated that there were five options currently being examined for potential disposal sites, but nothing has been decided. Some of the options include using the dredged material to raise the elevation of the Currituck Sound bottom near SAVs to encourage more SAV growth, refilling the dredged areas, using spoil as top dressing, or placing it in an old borrow site on US 158. However, more study would need to be done to determine what would be the best option.

NCDENR-DCM (Cathy Brittingham) stated she had many questions, but because the meeting was nearing its end, she would submit these at a later date so that we could move to the discussion of the practicability of ER2. She did ask if the SAV locations mapped were from the 2007 USACE survey. CDG-Lochner (Roy Bruce) stated that they were. NCDENR-DCM (Cathy Brittingham) wanted the more recent 2010 NCDOT SAV survey to be used; CDG-Lochner (Roy Bruce) noted that the data from the 2010 survey would be folded in once available.

NCDOT NEU (Bruce Ellis) indicated that the SAV field work has been completed. He noted that the SAV study was not being done specifically for the Mid-Currituck Bridge project and its corridor.

NCDOT (Lonnie Brooks) asked if there were any pile alternatives were considered besides steel piles. CDG-Lochner (Roy Bruce) answered that concrete was examined, but NCTA was leaning toward using the steel piles; no final decision on pile type will be made until completion of ongoing geotechnical studies. NCDENR-DWQ (David Wainwright) asked what the cost difference was between the two. CDG-Weeks Marine (Neal Williams) answered that steel is cheaper and the equipment to install it is smaller. CDG-Lochner (Roy Bruce) added that it was easier to transfer steel to the site.

- **Handout 25** – PB (John Page) presented information on why NCTA believes ER2 is not a practicable alternative. In NCTA's opinion ER2 is logistically unavailable and incapable of being implemented for four reasons (see details in PowerPoint slide). More detail is presented in the handout. PB (John Page) asked the TEAC members to provide comments within the next 30 days.
- **Wrap up/Next Steps** – NCTA (Tracy Roberts) presented the next steps in the process. USACE (Scott McClendon) stated that USACE was struggling with the issue of funding and the state legislature defining project locations. PB (John Page) noted that the project has a long history of being planned as a toll project. It was listed as being funded by other sources in the State Transportation Improvement Program in effect with the 1998 Draft Environmental Impact Statement was released. The General Assembly authorized NCDOT to charge tolls on the bridge in that same period. There are system wide effects that need to be taken into account. NCDENR-DCM (Cathy Brittingham) noted that early in the current study, NCDOT was taking a systemwide approach to project planning. PB (John Page) stated that this is what was done in developing and assessing alternatives in the DEIS. The only road improvement for the project area in the State Transportation Improvement Program is a NC 12/US 158 interchange. It is funded for planning only.

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NCTA (Tracy Roberts) thanked the attendees for their participation and adjourned the meeting at 1:50 PM.

MEETING MINUTES

Date: September 8, 2010
2:00 PM to 5:00 PM
NCTA Board Room

Project: STIP R-3329/R-2559 Monroe Connector/Bypass – STP-NHF-74(90)

Monroe Connector/Bypass Spotlight:

Short-listed design-build teams were each allowed 45 minutes to present information, ask questions, and get feedback from agency representatives. To protect the confidentiality of the design-build process, minutes will not be provided for these sessions.

DRAFT

Interagency Merger Process Team Meeting

Concurrence Point 2

July XX, 2013

Cape Fear Crossing Project

New Hanover and Brunswick Counties, North Carolina

STIP Project No. U-4738

PURPOSE OF THE MEETING

The primary purpose of this meeting is to present information to the Interagency Merger Process Team (Merger Team) for review and comment, and to obtain concurrence on the proposed Detailed Study Alternatives Carried Forward (DSAs). The Merger team met during six Turnpike Environmental Agency Coordination (TEAC) meetings from February 2010 through May 2011. The Merger team was presented preliminary recommendations for DSAs at the May 2011 TEAC meeting.

PROPOSED ACTION

The North Carolina Department of Transportation (NCDOT) proposes to construct a project known as the Cape Fear Crossing (formerly the Cape Fear Skyway), which would extend from the vicinity of US 17 and future I-140 in Brunswick County to US 421 in southern New Hanover County, including a crossing of the Cape Fear River.

According to the *Feasibility Study for the Wilmington Southern Bridge from US 17 Bypass near Bishop to US 421* prepared by the NCDOT in August 2003, the project would serve multiple users, including the Port of Wilmington, the military, commuters, and tourists. **Figure 1** shows the Wilmington region, and **Figure 2** shows the general project location and study area. **Figure 3** shows environmental features of the proposed study area.

The proposed action is listed in the 2012-2016 State Transportation Improvement Program (STIP) as Project Number U-4738. It is listed as the “New route (Cape Fear Skyway), US 17 to Independence Boulevard-Carolina Beach Road intersection. Construct a new facility with a structure over the Cape Fear River”. The project is proposed to be approximately 9.5 miles.

The Wilmington Urban Area Metropolitan Planning Organization’s (WMPO) current Long Range Transportation Plan (LRTP), entitled the *Cape Fear Commutes 2035 Transportation Plan* (December 2010) cites the project as an important intermodal connector to improving freight movements in the Wilmington Area and accommodating anticipated growth at the Port of Wilmington. The plan cites the project as the highest profile project that is not funded through the LRTP, and is anticipated to be part of a comprehensive transportation network connecting Brunswick County to New Hanover County.

Project Schedule

Draft Environmental Impact Statement
Final Environmental Impact Statement
Record of Decision

Spring 2016
Summer 2017
Winter 2017

Concurrence Point 2: Detailed Study Alternatives Carried Forward

The Alternatives Analysis process included a three-tiered approach for analyzing alternatives to carry forward for detailed study. This included a qualitative first screening, a quantitative second screening, and a quantitative third screening.

Qualitative First Screening

The Qualitative First Screening screened alternatives against the purpose and need for the project. The alternatives analyzed in the first screening included the following:

- No-Build or No-Action Alternative
- Transportation Demand Management Alternative (TDM)
- Transportation System Management Alternative (TSM)
- Mass Transit/Multi-Modal Alternative
- Build Alternatives, including Improve Existing US 17, New Location Alternatives, and New Location/Improve Existing Roadway Hybrids

Those alternatives not meeting the defined purpose and need were removed from further consideration. The results of the Qualitative First Screening indicated that a freeway or arterial facility, either on new location, an upgrade of existing roadways, or a hybrid of new location and upgrade existing options, would fulfill the identified needs and meet the purpose of the project. **Table 1** lists the alternatives carried forward to a quantitative second screening, as well as those eliminated from further consideration based on the evaluations described in the previous sections.

Table 1: Alternatives Analyzed in First Screening

Alternative Concepts Retained for Quantitative Second Screening	Alternative Concepts Eliminated from Further Consideration
No-Build	Transportation Demand Management
Improve Existing US 17 (Widening Arterial and Freeway Alternatives)	Transportation System Management
New Location (Freeway)	Mass Transit/Multi Modal
New Location/Improve Existing Roadway Hybrids	

Quantitative Second Screening

The Quantitative Second Screening resulted in the identification of 29 segments that, when combined, resulted in 33 possible complete corridors including the upgrade existing US 17 alternative, the feasibility alignment, and the alignment proposed by WMPO for corridor preservation (**Figure 4**). These initial corridors were analyzed to determine resources occurring within a 500-foot corridor, with a 160-foot corridor used for alternative segments along US 421. The screening criteria for the quantitative second screening were based primarily on evaluating the impacts for corridors that implement the alternative concepts advanced from the qualitative first screening. The quantitative evaluation was based on potential impacts to natural resources, the human environment and cultural resources, as well as the cost and other physical features associated with each corridor. The second screening did not include the quantitative evaluation of traffic operations, freight movements or the measures identified as potential secondary benefits of

the project. Each parameter was evaluated and given a quartile ranking of “1” through “4.” These were totaled for each of the 33 corridors, which were also assigned quartile rankings.

Based on the quantitative screening, the following segments were recommended for elimination:

- Segment 17 – eliminated due to North Carolina Coastal Land Trust (NCCLT) property and tidal marsh impacts.
- Segment 23 – eliminated due to NCCLT property and tidal marsh impacts.
- Segment 24 – eliminated due to link with Segments 17 and 23, tidal marsh impacts, width of Cape Fear River crossing, and circuitous nature from additional length.
- Segment 25 – eliminated due to engineering constraints associated with connecting to the I-140/US 17 interchange and service/access roads needed.
- Segment 11 – eliminated due to its circuitous nature and higher impacts in comparison to similar segments.
- Segment 12 – eliminated due to similarities in location and impacts with Segment 15, and because it bisects the Brunswick Forest development.
- Segment 19 – eliminated due to impacts to Significant Natural Heritage Areas adjacent to Town Creek and its associated wetland systems.
- Segment 18 – eliminated due to its link with Segment 19.
- Segment 16 – eliminated due to its link with Segment 17.

Corridors that ranked within the top quartile and did not include any of the above segments recommended for elimination from further consideration continued into the quantitative third screening. This included 20 corridors (**Figure 5**).

Quantitative Third Screening

Corridors recommended for further screening as a result of the Quantitative Second Screening were further analyzed by developing conceptual design layouts and determining impacts within an approximately 350-foot wide area. These designs were used to assist in determining which alternatives will be carried into the DEIS.

Similar to the screening criteria for the quantitative second screening, the third screening is based primarily on evaluating the impacts for corridors that were advanced from the second screening. The quantitative evaluation is based on potential impacts to natural resources, the human environment and cultural resources, as well as the cost and other physical features associated with each corridor. The third screening does include the quantitative evaluation of traffic operations.

Twenty alternatives were evaluated, with four additional alternatives added after a series of Citizens Informational Workshops as described in the next section; totaling 24 alternatives evaluated in this screening (see **Figures 6a and 6b** and **Table 2**). Six of these alternatives were recommended for elimination and 18 were recommended to be carried forward as Detailed Study Alternatives (DSAs). See **Table 3** for the reasons alternatives were eliminated. **Figure 7** depicts the alignments recommended for elimination and **Figure 8** depicts the alignments recommended to be carried forward as DSAs. Proposed typical sections are included in **Figure 9**. The No-Build Alternative will also be carried forward for detailed study in the DEIS.

Table 2: Alternatives Evaluated in Quantitative Third Screening

Option	Description
A	New location option: Begins at I-140 and crosses US 17, travels between Brunswick Forest and Mallory Creek developments, and crosses Cape Fear River to terminate at Independence Boulevard.
B	New location option: Begins at I-140 and crosses US 17, travels between Brunswick Forest and Mallory Creek developments, and crosses Cape Fear River to terminate at Shipyard Boulevard.
C	New location option: Begins at I-140 and crosses US 17, travels parallel to Wire Road, and crosses Cape Fear River to terminate at Independence Boulevard.
D	New location option: Begins at I-140 and crosses US 17, travels parallel to Wire Road, and crosses Cape Fear River to terminate at Shipyard Boulevard.
E	Hybrid option: Begins at I-140 to US 17 on new location; continues as upgrade of existing US 17 (freeway option)
F	Upgrade existing option: Upgrade US 17 (freeway option)
G	Hybrid option: Begins as upgrade existing US 17 (freeway option), then continues on new location between Brunswick Forest and Mallory Creek developments, and crosses Cape Fear River to terminate at Independence Boulevard.
H	Hybrid option: Begins as upgrade existing US 17 (freeway option), then continues on new location between Brunswick Forest and Mallory Creek developments, and crosses Cape Fear River to terminate at Shipyard Boulevard.
I	Hybrid option: Begins as upgrade existing US 17 (freeway option), then travels parallel to Wire Road, and crosses Cape Fear River to terminate at Independence Boulevard.
J	Hybrid option: Begins as upgrade existing US 17 (freeway option), then travels parallel to Wire Road, and crosses Cape Fear River to terminate at Shipyard Boulevard.
K	New location option: Begins at I-140 terminus through Snee Farm/Stoney Creek subdivisions, travels through Brunswick Forest, and crosses Cape Fear River to terminate at Independence Boulevard.
L	New location option: Begins at I-140 terminus through Snee Farm/Stoney Creek subdivisions, travels through Brunswick Forest, and crosses Cape Fear River to terminate at Shipyard Boulevard.
M	New location option: Begins at I-140 terminus through Snee Farm/Stoney Creek subdivisions, travels south of Brunswick Forest, and crosses Cape Fear River to terminate at Independence Boulevard.
N	New location option: Begins at I-140 terminus through Snee Farm/Stoney Creek subdivisions, travels south of Brunswick Forest, and crosses Cape Fear River to terminate at Shipyard Boulevard.
O	Hybrid option: Begins at I-140 to US 17 on new location; continues as upgrade of existing US 17 (arterial widening option)
P	Upgrade existing: Upgrade US 17 (arterial widening option)
Q	Hybrid option: Begins as upgrade existing US 17 (arterial widening option), then continues on new location between Brunswick Forest and Mallory Creek developments, and crosses Cape Fear River to terminate at Independence Boulevard.
R	Hybrid option: Begins as upgrade existing US 17 (arterial widening option), then continues on new location between Brunswick Forest and Mallory Creek developments, and crosses Cape Fear River to terminate at Shipyard Boulevard.
S	Hybrid option: Begins as upgrade existing US 17 (arterial widening option), then travels parallel to Wire Road, and crosses Cape Fear River to terminate at Independence Boulevard.
T	Hybrid option: Begins as upgrade existing US 17 (arterial widening option), then travels parallel to Wire Road, and crosses Cape Fear River to terminate at Shipyard Boulevard.

Option	Description
K avoidance	New location option: Begins at I-140 terminus avoiding Snee Farm/Stoney Creek subdivisions, travels through Brunswick Forest, and crosses Cape Fear River to terminate at Independence Boulevard.
L avoidance	New location option: Begins at I-140 terminus avoiding Snee Farm/Stoney Creek subdivisions, travels through Brunswick Forest, and crosses Cape Fear River to terminate at Shipyard Boulevard.
M avoidance	New location option: Begins at I-140 terminus avoiding Snee Farm/Stoney Creek subdivisions, travels south of Brunswick Forest, and crosses Cape Fear River to terminate at Independence Boulevard.
N avoidance	New location option: Begins at I-140 terminus avoiding Snee Farm/Stoney Creek subdivisions, travels south of Brunswick Forest, and crosses Cape Fear River to terminate at Shipyard Boulevard.

Table 3: Alternatives Recommended for Detailed Study

Option	Recommended for Detailed Study	Reasons for Elimination
A	✓	n/a
B	✓	n/a
C	✓	n/a
D	✓	n/a
E	x	Eliminated due to high number of relocations, relocations within low-income and minority population areas, impacts to historic areas and minimal improvement to traffic operations. This corridor is similar to Option F (which will be retained for further study) for a majority of its length; however, it has a substantially higher construction cost and impacts more wetlands.
F	✓	n/a
G	✓	n/a
H	✓	n/a
I	✓	n/a
J	✓	n/a
K	x	Eliminated due the high number of relocations in the neighborhoods south of US 17/I-140 interchange and concerns voiced by the public at the March 2011 workshops. These options were compared to the K, L, M and N avoidance options to determine if the avoidance options would provide greater balance between impacts to the natural and human environments. Based on a comparison of the impacts it was determined that the avoidance options did provide a substantial reduction in impacts to the human environment with only a modest increase in impacts to the natural environment; therefore, it is recommended that the original K,L,M and N options be eliminated from further study.
L	x	Eliminated due the high number of relocations in the neighborhoods south of US 17/I-140 interchange and concerns voiced by the public at the March 2011 workshops. These options were compared to the K, L, M and N avoidance options to determine if the avoidance options would provide greater balance between impacts to the natural and human environments. Based on a comparison of the impacts it was determined that the avoidance options did provide a substantial reduction in impacts to the human environment with only a modest increase in impacts to the natural environment; therefore, it is recommended that the original K,L,M and N options be eliminated from further study.
M	x	Eliminated due the high number of relocations in the neighborhoods south of US 17/I-140 interchange and concerns voiced by the public at the March 2011 workshops. These options were compared to the K, L, M and N avoidance options to determine if the avoidance options would provide greater balance

Option	Recommended for Detailed Study	Reasons for Elimination
		between impacts to the natural and human environments. Based on a comparison of the impacts it was determined that the avoidance options did provide a substantial reduction in impacts to the human environment with only a modest increase in impacts to the natural environment; therefore, it is recommended that the original K,L,M and N options be eliminated from further study.
N	x	Eliminated due the high number of relocations in the neighborhoods south of US 17/I-140 interchange and concerns voiced by the public at the March 2011 workshops. These options were compared to the K, L, M and N avoidance options to determine if the avoidance options would provide greater balance between impacts to the natural and human environments. Based on a comparison of the impacts it was determined that the avoidance options did provide a substantial reduction in impacts to the human environment with only a modest increase in impacts to the natural environment; therefore, it is recommended that the original K,L,M and N options be eliminated from further study.
O	x	Eliminated due to high number of relocations, relocations within low-income and minority population areas, impacts to historic areas and minimal improvement to traffic operations. This corridor is similar to Option P (which will be retained for further study) for a majority of its length; however, it has a substantially higher construction cost and impacts more wetlands.
P	✓	n/a
Q	✓	n/a
R	✓	n/a
S	✓	n/a
T	✓	n/a
K avoidance	✓	n/a
L avoidance	✓	n/a
M avoidance	✓	n/a
N avoidance	✓	n/a

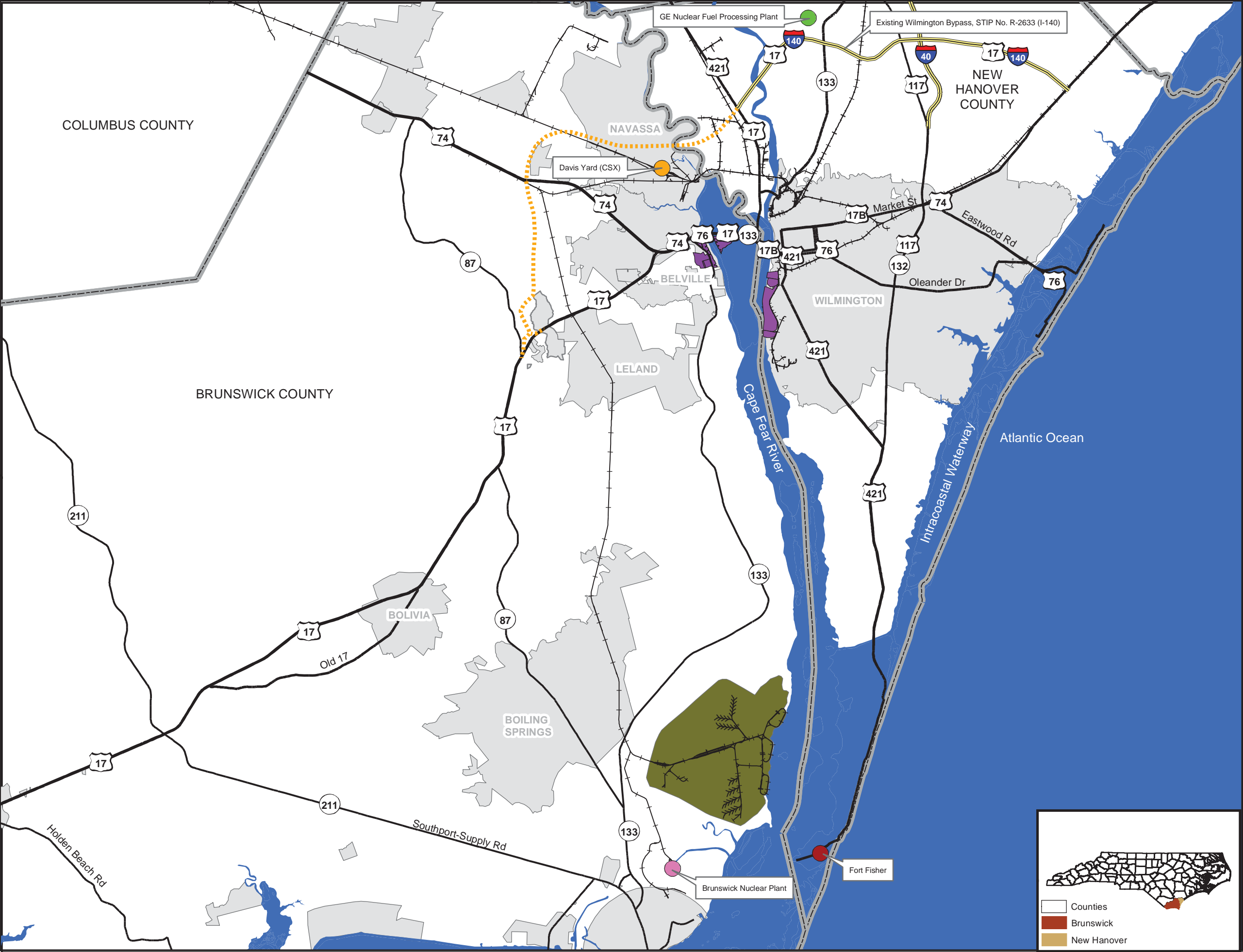
Public Involvement

As described previously, the second series of CIWs were held in March 2011 with a total of 417 attendees in New Hanover and Brunswick Counties to present the project purpose and need and preliminary alternatives, and to solicit input from the public on these topics.

At these public workshops, many of the residents of the neighborhoods (including Stoney Creek, Snee Farm, and Planter's Walk) located in the vicinity of the I-140/US 17 interchange were opposed to the alternatives that would affect their neighborhoods. Many of the residents also

recommended developing alternatives that would follow a more southern route and not bisect their neighborhood. The quantitative second screening included two segments that were eliminated due to engineering constraints and the impacts associated with providing access to the neighborhoods in the vicinity of the interchange.

The project team decided to revisit these segments to determine if an alternative could be developed that would reduce the impacts to the neighborhoods without substantially increasing other impacts. An alternative design was developed for each of the alternatives that impacted the neighborhoods (K,L,M, and N) that would greatly minimize the impacts to the Stoney Creek development by shifting the alignment further south. These alternatives are called K avoidance, L avoidance, M avoidance, and N avoidance.



CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

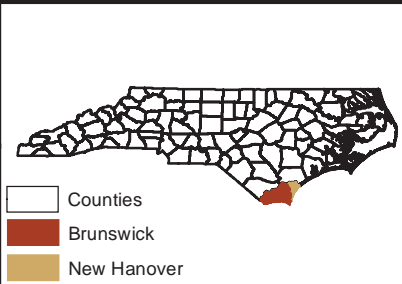


Legend

- Proposed Wilmington Bypass STIP No. R-2633 (I-140)
- Interstate Highways
- US Highways
- State Highways
- Railroad
- County Boundary
- GE Nuclear Fuel Processing Plant
- Davis Yard
- Brunswick Nuclear Plant
- Fort Fisher
- Sunny Point Military Ocean Terminal
- NC State Ports Authority
- Open Water
- Municipal Boundary



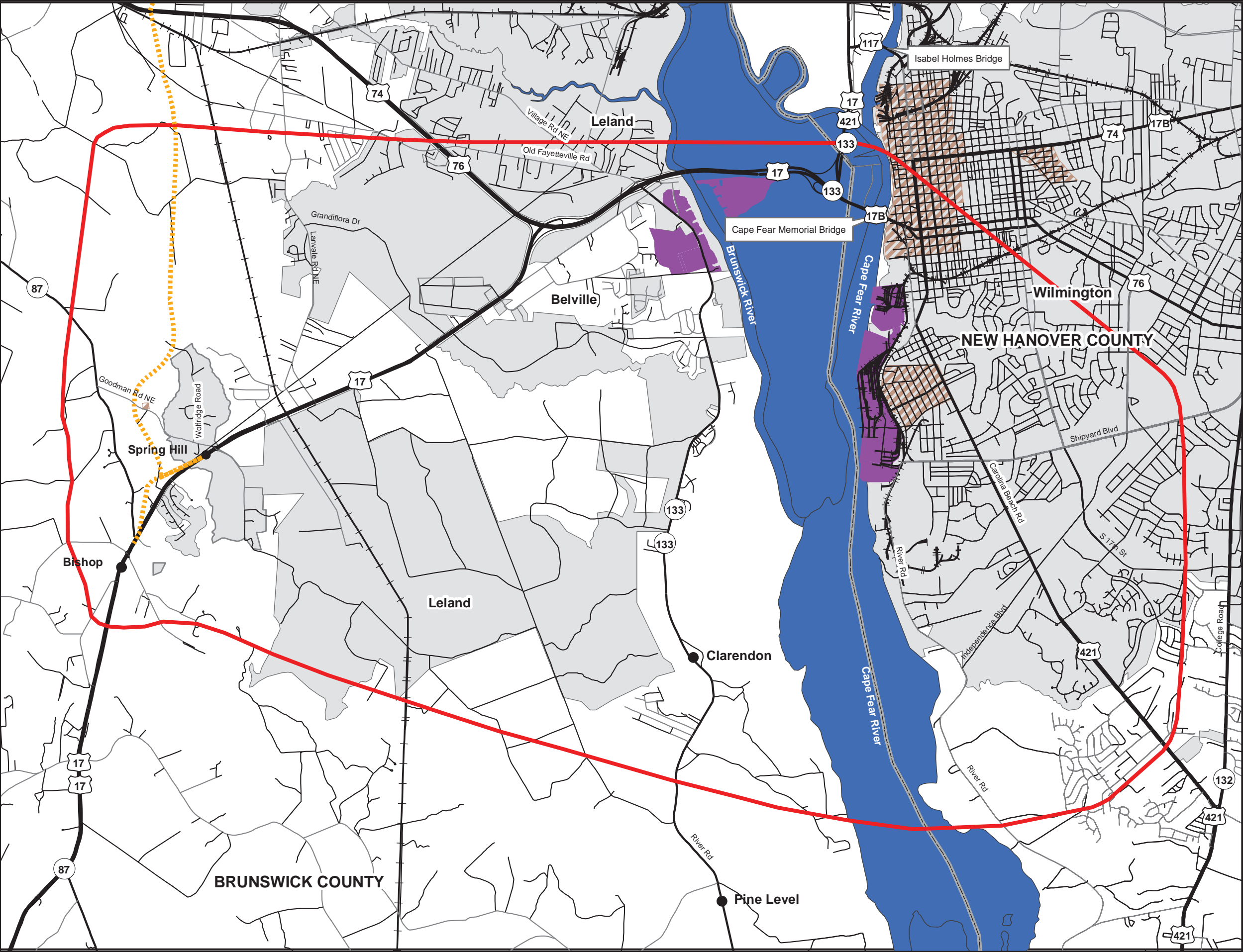
0 2.5 5 Miles



Cape Fear Crossing

Figure 1
Project Vicinity

Date: April 2011
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.



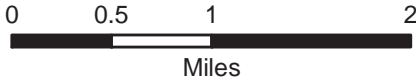
CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738



Legend

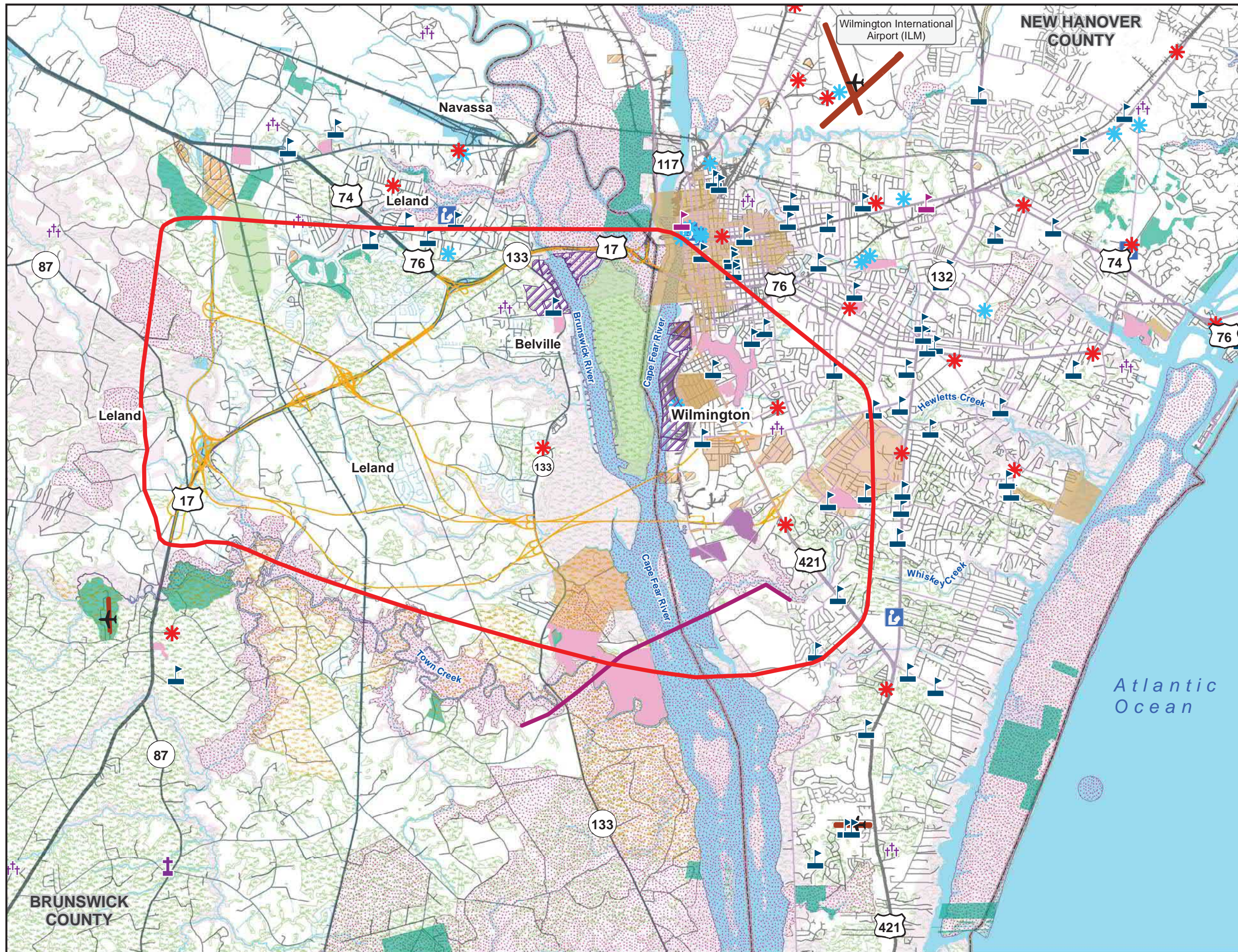
- Proposed Wilmington Bypass STIP No. R-2633 (I-140)
- Study Area
- US Highways
- State Highways
- Local Roads
- Railroad
- County Boundary
- NC State Ports Authority
- National Register Historic District
- Open Water
- Municipal Boundary



Cape Fear Crossing

**Figure 2
Study Area**

Date: May 2013
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.



CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738



Legend

- Project Study Area
- School
- College/Universities
- Cemetery
- Airport
- Church
- Fire Station
- Police Station or EMS
- Library
- Airport Runway
- Bike Route
- County Boundary
- Duke Energy Transmission Line
- Proposed Corridors
- Railroad
- Interstate Highways
- US Highways
- State Highways
- Local Roads
- Conservation Tax Credit Property
- Federal Land Ownership
- Hazardous Materials Site
- Historic Resource
- NC Coastal Land Trust
- Port of Wilmington
- Potential Historic Resources
- Parks
- Public Properties
- Flood Hazard Zone
- Significant Natural Heritage Area
- Water Course
- Wetlands

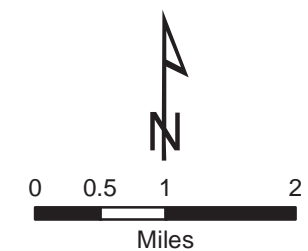
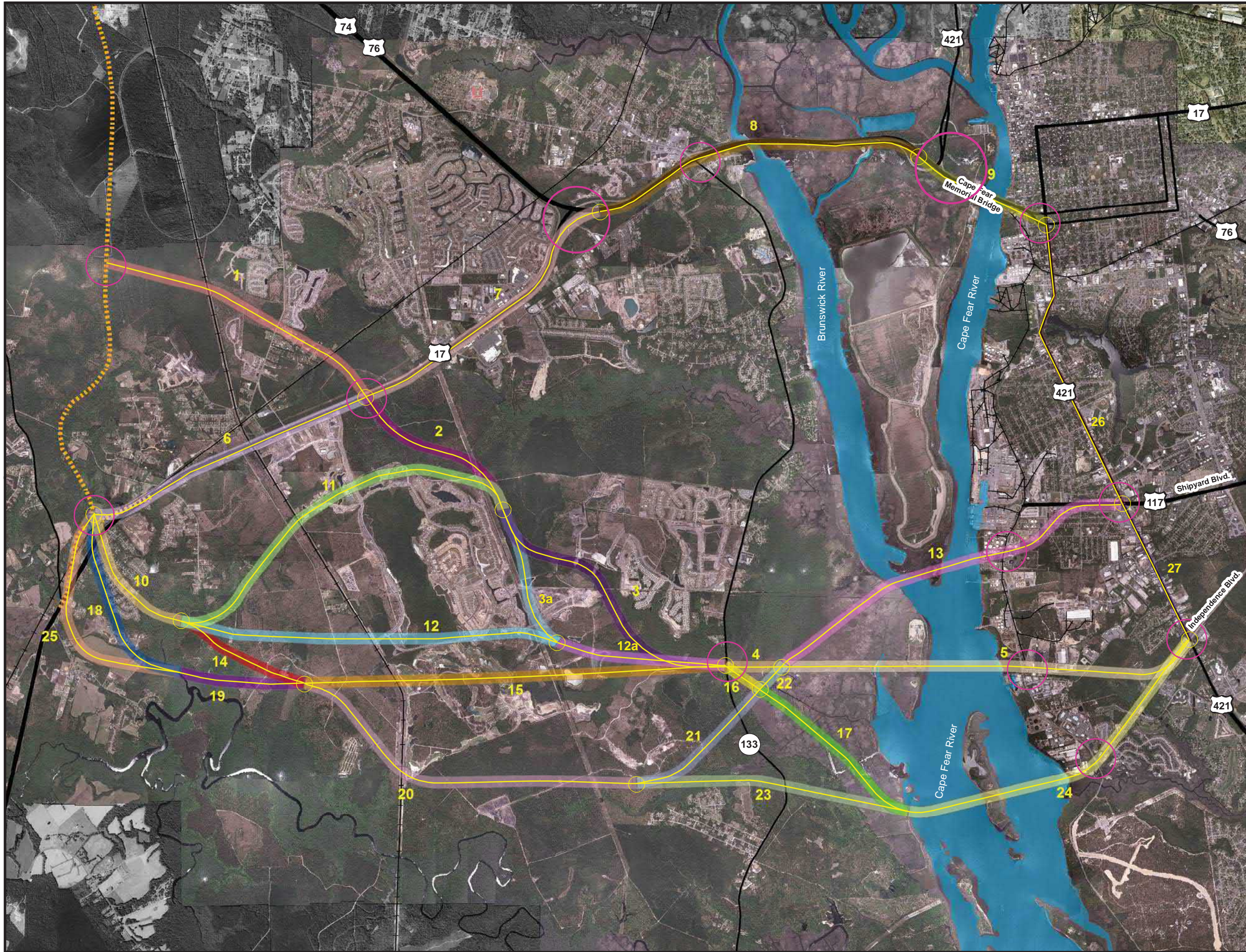


Figure 3
Environmental Features Map

Date: May 2013
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.



CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738



Legend

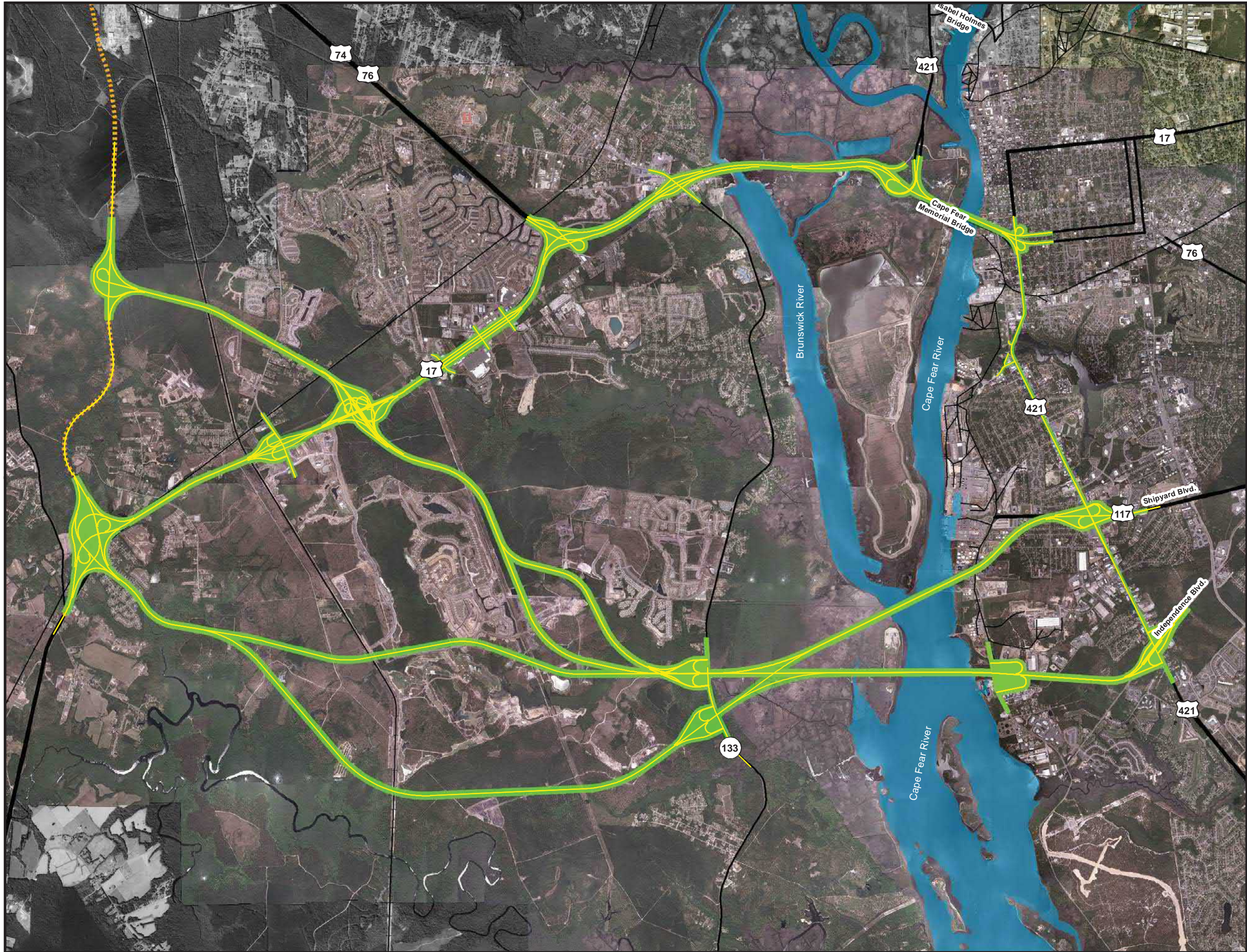
- Proposed Alignments
- # Segment Number
- Proposed Interchange
- Proposed Wilmington Bypass (I-140)
- US Highways
- State Highways
- Railroads
- Water Course



Cape Fear Crossing

Figure 4 Quantitative Second Screening Segments

Date: April 2011
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.



CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738



Legend

- Conceptual Centerlines
- Conceptual Corridors
- Proposed Wilmington Bypass (I-140)
- US Highways
- State Highways
- Railroads
- Water Course

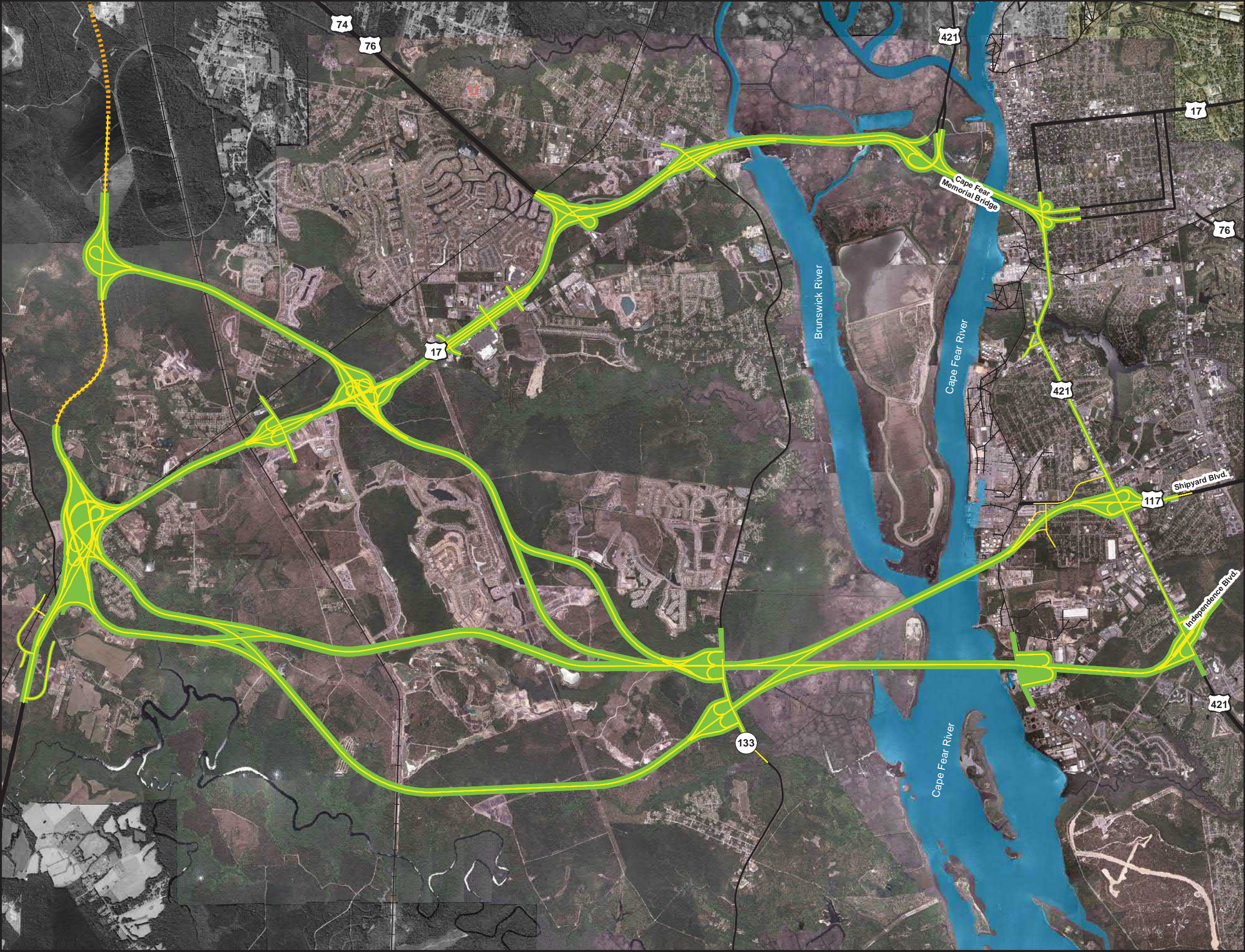


0 0.375 0.75 1.5
Miles

Cape Fear Crossing

Figure 5 Conceptual Alternative Designs

Date: April 2011
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.



CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738



Legend

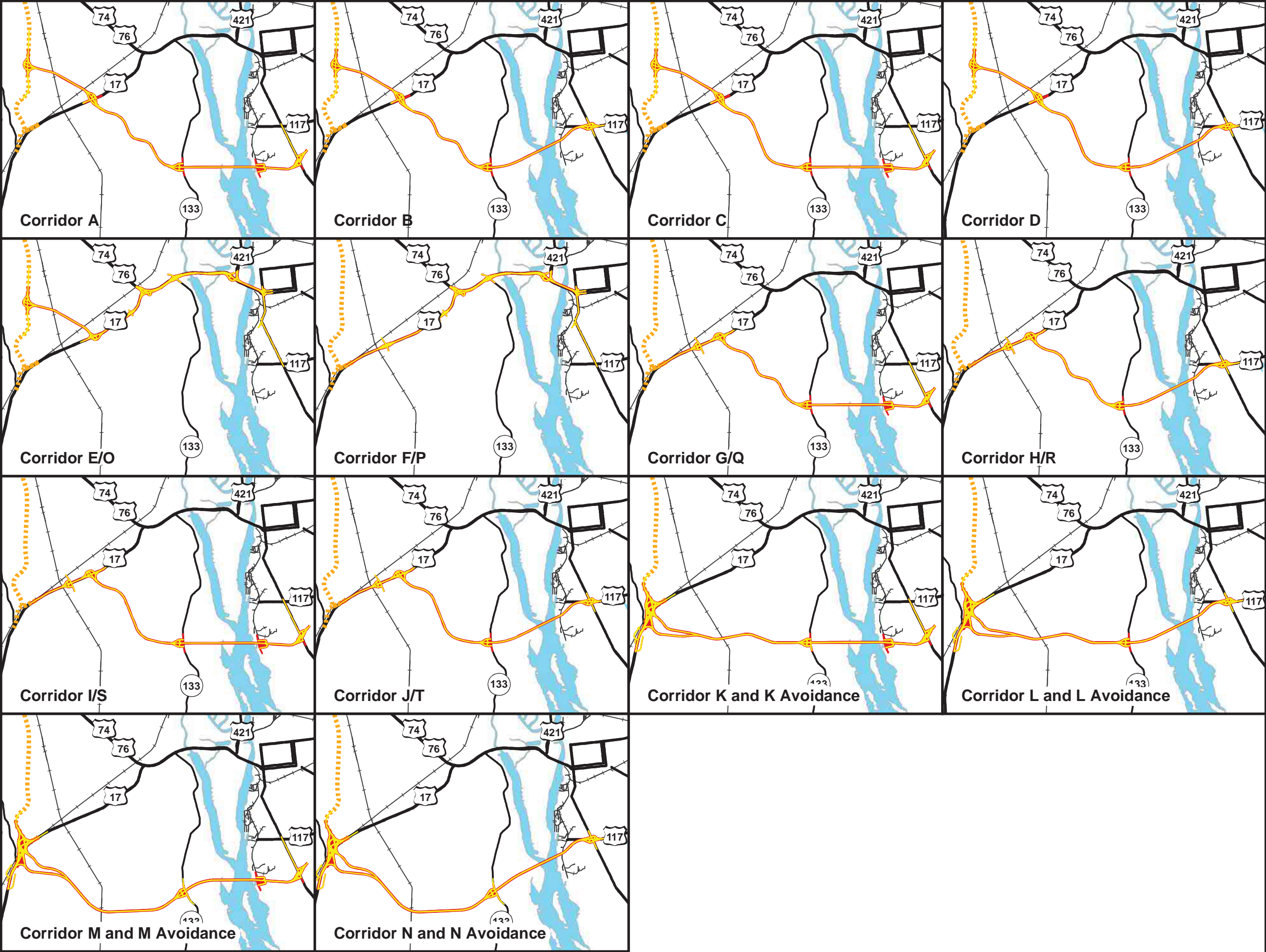
- Conceptual Centerlines
- Conceptual Corridors
- Proposed Wilmington Bypass (I-140)
- US Highways
- State Highways
- Railroads
- Water Course



Cape Fear Crossing

Figure 6A
Quantitative Third Screening

Date: May 2013
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.



CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738



Legend

- Conceptual Centerlines
- Conceptual Corridors
- Proposed Wilmington Bypass (I-140)
- US Highways
- State Highways
- Railroads
- Water Course

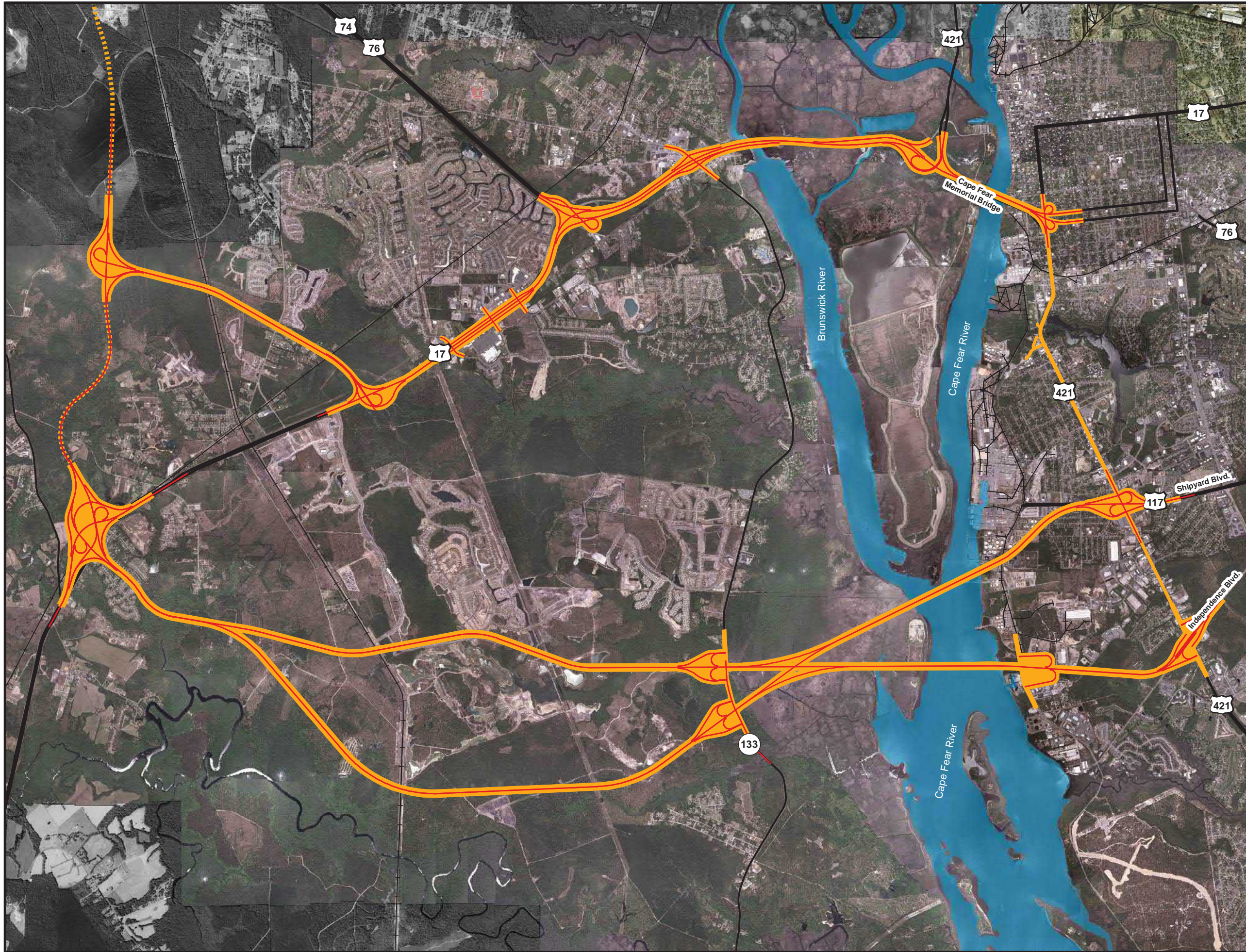


0 1 2 4
Miles

Figure 6B
Quantitative Third Screening

Date: May 2013
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

Design indicates freeway. Conceptual design alternatives for Options E, F, G, H, I, and J have been developed as both freeway and arterial widening alternatives.



CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738



Legend

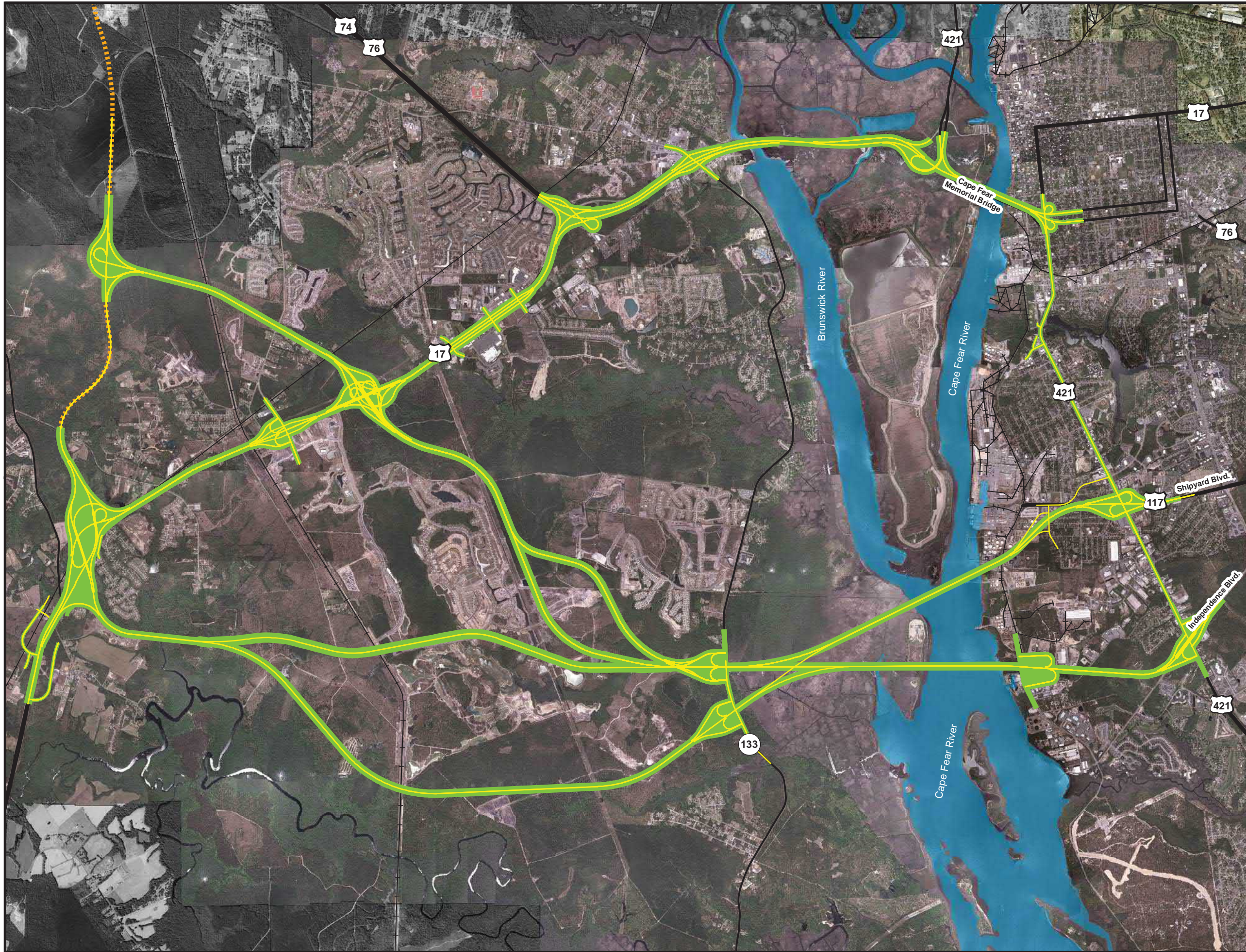
- Centerlines Recommended for Elimination
- Corridors Recommended for Elimination
- Proposed Wilmington Bypass (I-140)
- US Highways
- State Highways
- Railroads
- Water Course



0 0.375 0.75 1.5
Miles

Cape Fear Crossing
Figure 7
Options Recommended for
Elimination from Detailed Study

Date: May 2013
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.



CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738



Legend

- Conceptual Centerlines
- Conceptual Corridors
- Proposed Wilmington Bypass (I-140)
- US Highways
- State Highways
- Railroads
- Water Course



Cape Fear Crossing

Figure 8
Options Recommended for Detailed Study

Date: May 2013
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

6/2/99
5/28/2013
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Use near thur

PROJECT REFERENCE NO.	SHEET NO.
U-4738	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

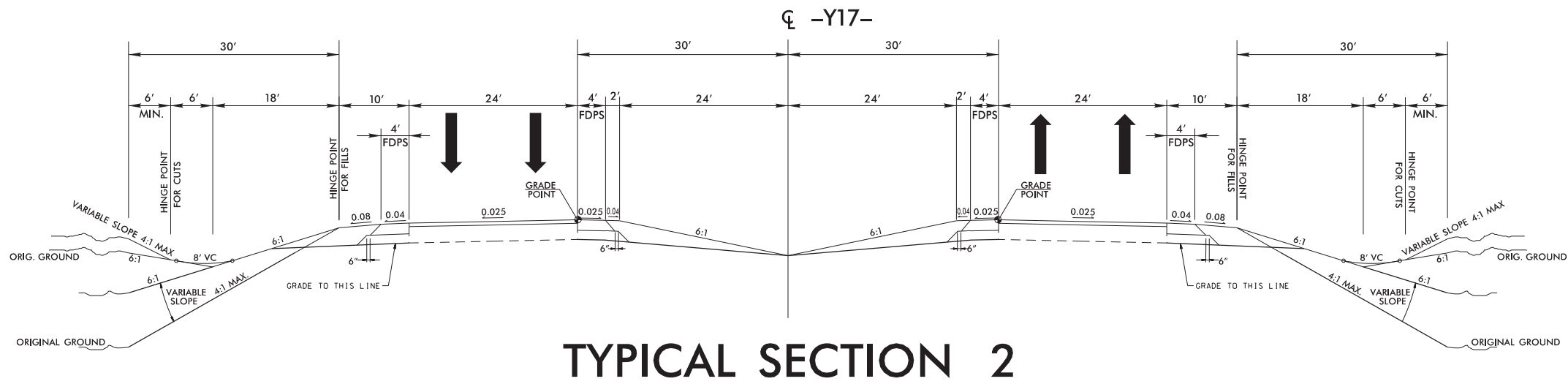
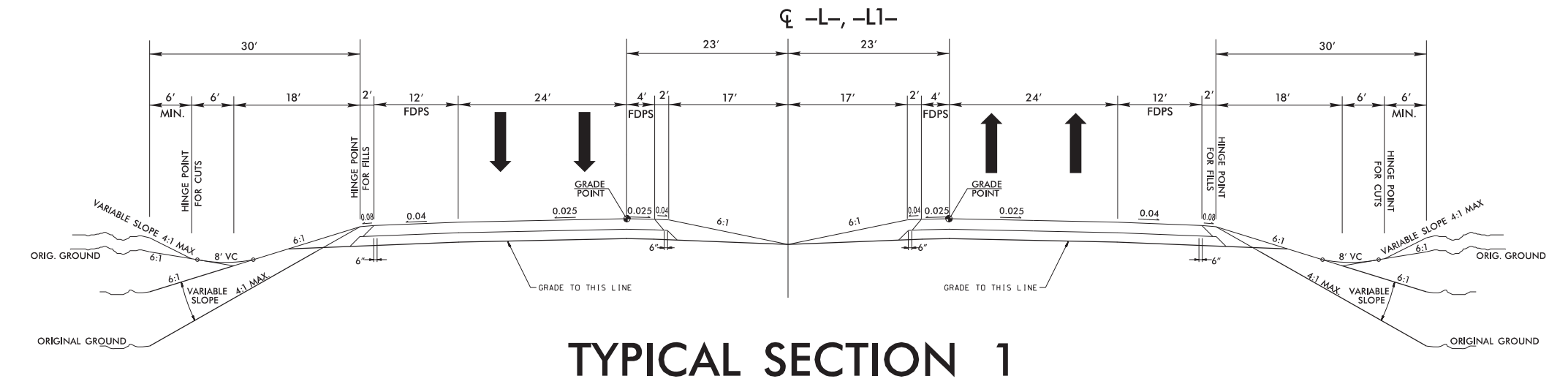


Figure 9
Typical Section



Turnpike Environmental Agency Coordination (TEAC) Meeting

MEETING MINUTES FINAL

Date: January 20, 2011
8:00 A.M. To 9:30 A.M.
NCTA Board Room

Project: STIP U-4738 – Cape Fear Skyway

Attendees:

George Hoops, FHWA
Brad Shaver, USACE
Scott McClendon, USACE
David Wainwright, NCDENR-DWQ
Amy Simes, NCDENR-DWQ
*Fritz Rohde, NMFS
Gary Jordan, USFWS
Travis Wilson, NCWRC
Steve Sollod, NCDCM
Chris Militscher, USEPA
*Jessie O'Neil - NCDMF
Mike Kozlosky, WMPO
*Stephanie Ayers, NCSPA

Doug Taylor, NCDOT – Roadway Design Unit
Lonnie Brooks, NCDOT – Structure Design Unit
Herman Huang, NCDOT – Human Environment Unit
Michael Bright, NCDOT – Utilities Unit
Jennifer Harris, NCTA
John Burris, HNTB
Spencer Franklin, HNTB
Kevin Markham, ESI
Steve Browde, Lochner
David Griffin, URS
Peter Trencansky, URS
Susan Westberry, URS
Joanna Rocco, URS

**Joined meeting via telephone*

Presentation Materials (Posted on TEAC website):

- Agenda
- Project PowerPoint Presentation
- Draft Alternatives Screening Summary Handouts – Tier One Handout and Tier Two Handout

Purpose:

The purpose of the meeting was to discuss comments received from the agencies on the draft alternatives screening, and the results of the first and second tier of alternatives screening, and to solicit comments and/or Issues of Concern from Participating and Cooperating Agencies in this regard.

General Discussion:

The following information was discussed at the meeting.

- NCDCM questioned why minority and low-income impacts were separated in the alternatives screening impact table. URS explained that the US Census separates the data, therefore it is presented separate. Both sets of information are considered in an environmental justice analysis. The impact analysis now calculates the impacts to minority and low-income populations based on the amount of residential displacements and not the amount of acreage within each corridor segment.

- USACE asked whether or not the Strategic Highway Corridor (SHC) component of the purpose and need would alone result in the elimination of alternatives in the Tier One screening. It was explained that it would not, as the SHC component of the purpose and need statement is now presented as a secondary need.
- WMPO requested an explanation for why the Mass Transit Alternative was not carried forward to the Tier Two screening. It was explained that while this alternative could provide minor improvements, they are not enough to be an acceptable solution to the projected future traffic capacity issue. There are also no notable plans in the region with respect to mass transit, such as a commuter rail plan, that would suggest mass transit would increase capacity to an acceptable level.
- USACE inquired about whether or not there were case studies related to when Transportation Systems Management (TSM) or Mass Transit Alternatives should be considered for a project. URS explained that per FHWA guidance, detailed studies are not warranted on projects located in regions with populations of less than 200,000. It was assumed that the Wilmington region would have a population greater than 200,000; however, the Wilmington Urban Area Long Range Transportation Plan did not include transit services along the US 17 corridor that would reduce traffic volumes to a level that would result in acceptable traffic operations. Further, it was determined that due to the magnitude of the traffic deficiencies (many intersections having a delay twice the threshold for Level of Service F) that TSM type improvements would not alleviate the traffic operations problems.
- NCDCM questioned why it was necessary to break out impacts to US 421 in the alternatives screening, and show the results with and without those segments along US 421. It was explained that this was done so that the upgrade existing alternative would not be discounted (it ranked low in the screening due to impacts along US 421). The upgrade existing alternative (widening arterial and freeway options) will be carried forward to the next phase of screening, as there will likely be ways to reduce the amount of impacts through avoidance and minimization, and by more closely assessing the magnitude of improvements needed on US 421.
- USACE requested that Segment 15 remain in the alternatives screening, since it's likely that environmental impacts from this segment, as opposed to Segment 12, will be less. It was agreed that Segment 15 should be widened for use in the next phase of screening, so that there will be more available area for possible preliminary alternatives within this area. USACE also requested information on the corridor widths that were used for impact calculations. URS explained that a width of 500 feet was used on all segments, with the exception of Segment 26 and Segment 27 along US 421, where 160 feet was used. The median width assumed is 46 feet. Bridge heights are assumed to be 187 feet for new location alternatives, and 135 feet (the height of the current Cape Fear Memorial Bridge when raised for vessel traffic) for the upgrade existing alternative.
- NCDCM suggested that the hazardous materials column in the screening table be eliminated since all segments have no impact. NCDCM also suggested that any columns that have zeros be indicated by a hyphen as opposed to a zero to remove clutter from the table.
- NCDWQ suggested that the number of 303(d) listed streams crossed be used in the table for quartile ranking purposes, and the amount of linear feet of listed streams crossed will remain in the impact table for reference.
- All agency members in attendance agreed with the segments recommended for elimination from further screening (Segments 11, 12, 16, 17, 18, 19, 23, 24, and 25). Corridor 15 will be widened to allow for minimization of impacts to Brunswick Forest and natural resources within the segment area. Corridors that remain after these segments were eliminated will be carried forward to the third phase of screening, which includes preparation of conceptual designs on these preliminary alternative corridors.
- All agency members in attendance had no objections to the final Draft Purpose and Need Statement, therefore agency comments have been concluded. Public comments on the purpose and need will be solicited during the next public workshop.
- No issues of concern were raised at the meeting.

Action Items:

- NCTA/URS to revise the Tier Two alternatives impact assessment and present to agencies at next TEAC meeting.
- NCTA/URS to begin the Tier Three phase of screening based on corridors recommended for further screening. Conceptual designs will be developed to determine anticipated area of impact for these corridors. Once all tiers of the screening have been completed, a Preliminary Alternatives Analysis Report will be developed.

Resolutions:

- None.

Next Steps:

- The next TEAC meeting for the Cape Fear Skyway is anticipated for March 2011.
- Public workshops are anticipated to be held in early March 2011 to present and solicit comments on the final Draft Purpose and Need and preliminary alternatives to the public. Public comments from these meetings will be presented and discussed at upcoming agency meetings.



Turnpike Environmental Agency Coordination (TEAC) Meeting

MEETING MINUTES FINAL

Date: May 18, 2011
10:30 A.M. To 12:00 P.M.
NCTA Board Room

Project: STIP U-4738 – Cape Fear Skyway

Attendees:

George Hoops, FHWA
Brad Shaver, USACE
David Wainwright, NCDENR-DWQ
*Fritz Rohde, NMFS
Steve Sollod, NCDOT
Chris Militscher, USEPA
*Jessie Baker – NCDENR-DMF
*Renee Gledhill-Early - SHPO
Tara Murphy, WMPO
*Stephanie Ayers, NCSPA

Lonnie Brooks, NCDOT – Structure Design Unit
Tristram Ford, NCDOT – PDEA-HEU
Mathew Potter, NCDOT – PDEA
Jennifer Harris, NCTA
John Burris, HNTB
Kevin Markham, ESI
David Griffin, URS
Peter Trencansky, URS
*Susan Westberry, URS
Joanna Rocco, URS

**Joined meeting via telephone*

Presentation Materials (Posted on TEAC website):

- Agenda
- Project PowerPoint Presentation
- Draft Alternatives Screening Summary (Tier Three) Handout

Purpose:

The purpose of the meeting was to review comments received from the public at the workshops held in March, the results of the third tier of alternatives screening, and preliminary recommendations for Detailed Study Alternatives (DSAs), and to solicit comments and/or Issues of Concern from Participating and Cooperating Agencies in this regard.

General Discussion:

The following information was discussed at the meeting.

- USACE questioned why a more southern route had not been analyzed that would traverse Old Town. It was explained that the project team has analyzed more southern routes, and it was determined that these alternatives will not likely attract as much traffic (a vehicle miles traveled and vehicle hours traveled analysis was done on a southern route and showed that it attracted about half the traffic volumes than the other alternatives), it is farther away from the Port of Wilmington, and it would traverse Clarendon Plantation (a North Carolina Land Trust property and potential historic resource). SHPO stressed that at this time, no alternatives should be eliminated due to its potential to traverse potential historic properties. It was decided that the Alternatives Development Report would include information about more southern routes and why they were not considered further.

- USACE questioned what the source of the data was for intermittent and perennial streams as shown in the impact table for the alternative options and why they were separated. It was explained that this was based on a state data layer. At the request of USACE and agreed upon by the other agencies, impacts to perennial and intermittent streams will be combined, since distinguishing them is not useful at this time.
- A concern was noted by USEPA as to why minority and low-income impacts were separated in the alternatives screening impact table. It was explained that the US Census separates the data, therefore it is presented separate. It was explained that impacts to minority and low-income populations were calculated based on the amount of displacements within the conceptual design footprint that were within a census block group that has the potential to be either low-income or minority. A census block group is determined to have the potential to be either low-income or minority because the percentage of these demographic groups are below the county threshold. Both sets of information are considered in an environmental justice analysis, and residential and business impacts are combined within these columns. It was decided by the project team that the methodology for calculating these impacts needs to be explained in greater detail in the Alternatives Development Report. Potential low-income and minority impacts will be recalculated so that the potential impacts will not exceed the total number of relocations. It also needs to be clear that the full environmental justice evaluation, per Executive Order 12898, is not being conducted at this time, and will be performed once DSAs have been developed. At this time, the census data is being used as an indicator of potential sensitive populations. The project team asked USEPA for input into what would be the most appropriate way to present the data. No guidance was given by USEPA at the meeting. NCTA will continue to consult with USEPA to determine the most appropriate method for presenting the data.
- NCDWQ requested a detailed summary of the public workshops as is done with other NCDOT projects. NCTA will provide a summary and post to Constructware.
- NCDWQ questioned how impacts were calculated for the 'improve existing' option. It was explained that the third screening summary handout explains the design criteria and shows that an offset from the conceptual design centerline (approximately 300 feet total) was used to calculate impacts.
- A discussion was held about which options were recommended by the project team to be DSAs studied in the Draft Environmental Impact Statement. Those options that terminate at Shipyard Boulevard and begin at US 17 and I-140 (near the Stoney Creek neighborhood) were recommended for elimination from further study by the project team.
 - USACE stated that the Stoney Creek avoidance alternative options "M" and "K" should not be eliminated since they have fewer impacts when compared to other options. Option K could potentially be eliminated since it traverses the planned development within Brunswick Forest. It was agreed that these options would be reevaluated in the process of determining DSAs.
 - USEPA stated concern about options that begin with the segment that begins on I-140 and travels to US 17 due to concerns discovered in the Wilmington Bypass study. It was determined in that study that this area would not be an appropriate terminus for the Wilmington Bypass project because of the high quality wetland system, the Significant Natural Heritage Area of Battle Royal Bay, the Spring Hill community (a documented low-income and/or minority community), and the railroad crossing. It was explained that the function of the Cape Fear Skyway project is different than it was for the Wilmington Bypass, and there would not be a major interchange at I-140 and US 17 as it was proposed for the Wilmington Bypass. It was noted that this option was introduced by the local government (Wilmington Urban Area Metropolitan Planning Organization) and there are local efforts to preserve this corridor. While the corridor preservation process has not been formalized, the study team believed it prudent to include the alternative in the analysis. The study team will take all information available from the Wilmington Bypass study into account while analyzing alternatives for the Cape Fear Skyway project.
 - SHPO stated that there is not enough information to support eliminating any options based on the information presented at today's meeting. USEPA concurred with SHPO. SHPO also noted that if the upgrade existing option was chosen as the preferred

alternative, there will need to be more options other than the northern alignment for use in performing a Section 4(f) evaluation due to impacts to the Wilmington Historic District.

- NCDOT stated that any options that traverse coastal wetlands, notably an approximately five-acre tidal marsh wetland north of the marina where the new location options cross the Cape Fear River (terminating at Independence Boulevard), must be analyzed to avoid and minimize impacts to these resources to the greatest extent practicable.
- WMPO suggested that the options be color-coded in the reports to reduce confusion.
- NMFS stated that their preferred option at this time would be the upgrade existing option. SHPO stated concern with the upgrade existing option because of the historic district in downtown Wilmington that will be impacted.
- USEPA questioned what protected species have occurrences within the alternative options. It was explained that there are three known occurrences of plants: one occurrence of Savanna Indigo-bush and two occurrences of Carolina bishopweed. Both are listed as Federal Species of Concern. Red cockaded woodpecker and shortnose sturgeon also have known occurrences within one mile of the alternative options.
- WMPO requested that Tara Murphy be given permission to access the project's TEAC website on Constructware.
- USFWS and NCWRC representatives were not able to attend the meeting; therefore they will be contacted to determine if they have any additional comments on the information presented.

Action Items:

- NCTA/URS to revise the Alternatives Development Report and present to agencies at an upcoming TEAC meeting.
- NCTA/URS to provide a more detailed summary of the public workshops to the agencies.
- NCTA to add Tara Murphy to list of TEAC members on Constructware.
- NCTA to contact USFWS and NCWRC to determine if they have additional comments.

Resolutions:

- None.

Next Steps:

- The next TEAC meeting for the Cape Fear Skyway is anticipated for September 2011.

Section 404 / NEPA Interagency Merger Process Concurrence Agreement
Concurrence Point No. 1 – Purpose and Need and Study Area Defined

Cape Fear Crossing
New Hanover and Brunswick Counties, North Carolina
STIP Project U-4738

Project Need:

- Traffic Capacity Deficiencies
- North Carolina Port Access

Project Purpose:

The purpose of the proposed action is to improve traffic flow and enhance freight movements beginning in the vicinity of US 17 and future I-140 in Brunswick County across the Cape Fear River to US 421 near the Port of Wilmington in southern New Hanover County.

The Project Team has concurred on this date of June 13, 2013 with the Purpose and Need for the proposed project as stated above and the Project Study Area shown on the attached figure which will include the expanded area to the south of Town Creek.

USACE Brad Shaver
Brad Shaver

NCDOT Jennifer Harris
Jennifer Harris

USEPA Chris Militscher
Chris Militscher

FHWA Ron Lucas
Ron Lucas

NCDWQ Mason Herndon
Mason Herndon

NCWRC Travis Wilson
Travis Wilson

NCDME Jessi Baker
Jessi Baker

NMFS Fritz Rohde
Fritz Rohde

SHPO Renee Gledhill-Earley
Renee Gledhill-Earley

USCG Terry Knowles
Terry Knowles

NCDCM Steve Sollod
Steve Sollod

WMPO Mike Kozlosky
Mike Kozlosky

USEWS Gary Jordan
Gary Jordan

RPO Don Egbert
Don Egbert



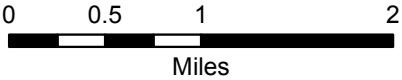
CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738



Legend

- Project Study Area
- Proposed Wilmington Bypass (I-140)
- US Highways
- State Highways
- Railroads
- Water Course



Project Study Area

Date: June 2013
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT,
Town of Leland, and URS.



MEMORANDUM

To: Meeting Attendees

From: Joanna Rocco

Date: July 26, 2013

Subject: Minutes of Meeting held July 22, 2013 at 1:00 PM
Cape Fear Crossing Project, STIP U-4738
305 Chestnut Street, Wilmington, NC – 4th floor training room

Attendees:

Work Group Members: Laura Padgett-City of Wilmington, Bill Sisson-Town of Wrightsville Beach, and Joe Breault-Town of Belville

Pat Batleman, Town of Leland
Brenda Bozeman, Town of Leland
Karen Fussell, NCDOT
Jennifer Harris, NCDOT
Suraiya Rashid, WMPO

Patrick Riddle, NCDOT
Tracy Roberts, HNTB
Joanna Rocco, URS
Jonathan Spiers, Port City Daily

The third meeting of the Wilmington Urban Area Metropolitan Planning Organization's (WMPO) Transportation Advisory Committee (TAC) Cape Fear Crossing Workgroup was held on July 22, 2013. The purpose of the meeting was to discuss the subject project, project updates, and the project team's approach on screening alternatives for detailed study in the Draft Environmental Impact Statement (DEIS).

Laura Padgett called the meeting to order and introductions took place. Workgroup members were provided with an agenda, the final minutes from the previous workgroup meeting held on 5/13/13, and a copy of the meeting's presentation.

Joanna Rocco then gave a presentation on the project status and the alternatives screening process. See attached for presentation.

Discussion points from the meeting are summarized below:

- The TAC will be voting on the revised Leland alignment on 7/31/13. The Leland alignment was revised during a meeting on 7/1/13 with representatives of NCDOT, WMPO, the Town of Leland, Brunswick Forest, and URS.



Minutes of Meeting

July 24, 2013

Page 2

- The workgroup members requested a copy of the 6/13/13 merger meeting summary, as well as any updates after the next merger meeting to be held in August or September. This purpose of the next merger meeting will be to reach concurrence on a narrowed-down list of Detailed Study Alternatives (DSAs). These alternatives will be studied in detail in the DEIS. *Update: URS distributed the 6/13/13 merger meeting summary to workgroup members on 7/23/13. It has been decided that the next merger meeting will be held in September.*
- Bill Sisson noted he had concerns regarding the maintenance costs of the bridge and asked that life-cycle costs be considered. It was explained that the project is planned to have a fixed-span bridge constructed over the river, as opposed to a moveable span bridge, which will substantially reduce operation and maintenance costs.
- Bill Sisson expressed concerns regarding any obstacles that could be presented by the merger team agencies. He requested that any concerns be brought to the WMPO's attention so that they can work to resolve them.
- Joe Breault noted that some of the county GIS data may not be accurate. NCDOT noted that they will check all shapefiles for accuracy.
- Joanna Rocco explained that a vessel survey would be distributed to property owners soon to get a better idea of local vessel usage on the Cape Fear and Northeast Cape Fear Rivers. Currently, the conceptual design for the upgrade existing US 17 alternative assumes the vertical clearance of the bridge would be 135' (the height of the existing Cape Fear Memorial Bridge when open). This design shows the approach portion of the bridge ending at Fifth Street; the existing bridge ends at Third Street.
- Laura Padgett asked about the naming convention of the project once built, since it was her understanding that the roadway would be designated as "I-140" to reduce confusion and promote route continuity with the Wilmington Bypass. Karen Fussell will check with Kevin Lacy on the process used to designate route numbers and who will make the decision.
- Workgroup members inquired as to why the need to satisfy local and regional plan consistency was removed from the purpose and need for the project during the 6/13/13 merger meeting. NCDOT explained that the agencies desired the needs to be based on existing or future problems such as roadway deficiencies, and not for future planned projects as noted in local plans and NCDOT's Strategic Highway Corridor Vision Plan.
- Laura Padgett requested that future newsletters to be sent to the public also be available for posting to the WMPO website. The next newsletter is anticipated to be distributed following the CP 2 merger meeting.
- A discussion was held regarding how the Leland alignment and the alignment proposed by USEPA would be inserted into the screening process. The USEPA alignment would include upgrade of existing US 17 until the US 421 interchange, where it would continue south along Eagle Island on new location and traverse a portion of available land north of the Port of Wilmington, terminating at



Minutes of Meeting

July 24, 2013

Page 3

US 421. It was explained that the project team felt it appropriate to insert these alternatives in the third screening, where they would be compared with the other alternatives based upon impacts within a 350-foot footprint. It was decided the first and second screening were not necessary, as they were added later in the planning phase of the project and would not present an accurate comparison.

- There are currently 26 alternatives. Bill Sisson suggested that the alternatives should be represented with contrasting colors on the mapping to reduce confusion.
- The next Cape Fear Crossing Workgroup meeting will be held after the CP 2 merger meeting to review discussions and decisions made at the merger meeting.

Action Items:

- NCDOT/URS to send the workgroup members a copy of the 6/13/13 merger meeting summary. *Update: URS distributed the 6/13/13 merger meeting summary to workgroup members on 7/23/13.*
- NCDOT/URS to notify the workgroup when the next merger meeting will be held. *It has been decided that the next merger meeting will be held in September. Workgroup members will be notified once a specific day and time are scheduled.*
- NCDOT/URS to coordinate with Mike Kozlosky regarding a tentative date for the next workgroup meeting.

The meeting was adjourned at 2:40 pm.



Cape Fear Crossing

STIP U-4738

Brunswick and New Hanover Counties

AGENDA

July 22, 2013

1:00 PM

Cape Fear Crossing Work Group – WMPO TAC
305 Chestnut Street, Wilmington, NC


- Introduction
- Cape Fear Crossing Presentation – Joanna Rocco, URS Corporation
 - Project Status
 - Current/Upcoming Tasks
 - Town of Leland Alignment
 - Alternatives Screening Methodology
 - Next Steps & Project Schedule
- Discussion





Cape Fear Crossing

WMPO TAC Workgroup Meeting





July 22, 2013

STIP Project No. U-4738
Federal Aid Project No. STP-0017(53)
WBS No. 40114
New Hanover and Brunswick Counties, North Carolina






CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC







Agenda

- ❖ Project Status
- ❖ Alternatives Screening Methodology
- ❖ Next Steps & Project Schedule




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Project Status

- ❖ Current tasks
 - Town of Leland alignment
 - Purpose and Need revisions
 - Natural resource investigations
 - Screening Indirect and Cumulative Effects (ICE)
 - Citizen correspondence
 - Vessel survey



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Town of Leland Alignment

- 7/1/13 Meeting
 - NCDOT, Town of Leland, WMPO, and URS
 - Alignment review and revision
 - Agreed upon alignment will be presented to WMPO on 7/31/13

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Town of Leland alignment in green – 7/1/13

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Project Status

- Upcoming tasks
 - Coordination with Duke Energy Progress
 - Agency coordination – Merger CP 2
 - Traffic forecasting
 - Alternatives screening
 - Cultural resources

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ALTERNATIVE SCREENING METHODOLOGY

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Summary of First Screening

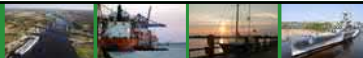
- ❖ Preliminary alternative concepts evaluated:
 - No-Build
 - Transportation Demand Management (TDM)
 - Transportation Systems Management (TSM)
 - Mass Transit/Multi-Modal
 - Improvements to Existing Roadways
 - New Location Roadways
 - Improve Existing / New Location Roadways Hybrids
- ❖ Alternatives qualitatively screened to determine if concepts meet Purpose and Need
- ❖ Additional alternatives currently being evaluated (TSM/TDM/Multi-modal combinations)

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Summary of First Screening


Alternative	Improve Traffic Flow and Enhance Freight Movement	Improve Connectivity between US 17 and the Port of Wilmington	Provide Facility Consistent with Vision of the SHC and NC Intrastate System (Secondary Benefit)
No-Build	✗	✗	✗
Transportation Demand Management	✗	✗	✗
Transportation System Management	✗	✗	✗
Mass Transit/Multi-Modal	✗	✗	✗
Improve Existing US 17 (Widening Arterial) (Freeway)	✓	✓	✗
New Location Roadway	✓	✓	✓
New Location/Improve Existing Roadway Hybrids	✓	✓	✓

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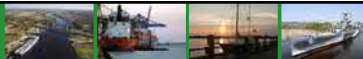



Summary of Second Screening

- ❖ Quantitative process (second screening)
 - Corridor level classification
 - ✦ 29 segments combined into 33 corridors
 - ✦ Utilized GIS features to calculate impacts within 500-foot corridors (160 feet along US 421)
 - Eliminated Alternatives/Segments
 - ✦ Eliminated based on impacts and design constraints
 - ✦ Resulted in preliminary study corridors for use in third screening




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14 preliminary study corridors




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Third Screening Process

- ❖ Developed 20 conceptual designs within preliminary study corridors
 - Designs developed within 14 preliminary study corridors
 - Six additional conceptual designs using standard arterial widening (for those utilizing existing US 17)




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Conceptual Designs – 20 Corridors


New Location Options



Option	Segment Composition
A	1,2,3,4,5,27
B	1,2,3,4,13
C	1,2,3a,12a,4,5,27
D	1,2,3a,12a,4,13
E	1,7f,8,9,26
F	6f,7f,8,9,26
G	6f,2,3,4,5,27
H	6f,2,3,4,13
I	6f,2,3a,12a,4,5,27
J	6f,2,3a,12a,4,13
K	10,14,15,4,5,27
L	10,14,15,4,13
M	10,14,20,21,22,5,27
N	10,14,20,21,22,13
O	1,7A,8,9,26
P	6A,7A,8,9,26
Q	6A,2,3,4,5,27
R	6A,2,3,4,13
S	6A,2,3a,12a,4,5,27
T	6A,2,3a,12a,4,13




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Conceptual Designs – 20 Corridors


Upgrade Existing Option



Option	Segment Composition
A	1,2,3,4,5,27
B	1,2,3,4,13
C	1,2,3a,12a,4,5,27
D	1,2,3a,12a,4,13
E	1,7,8,9,26
F	6F,7F,8,9,26
G	6F,2,3,4,5,27
H	6F,2,3,4,13
I	6F,2,3a,12a,4,5,27
J	6F,2,3a,12a,4,13
K	10,14,15,4,5,27
L	10,14,15,4,13
M	10,14,20,21,22,5,27
N	10,14,20,21,22,13
O	17A,8,9,26
P	6A,7A,8,9,26
Q	6A,2,3,4,5,27
R	6A,2,3,4,13
S	6A,2,3a,12a,4,5,27
T	6A,2,3a,12a,4,13





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Conceptual Designs – 20 Corridors

Hybrid Options





Option	Segment Composition
A	1,2,3,4,5,27
B	1,2,3,4,13
C	1,2,3a,12a,4,5,27
D	1,2,3a,12a,4,13
E	1,7f,8,9,26
F	6f,7f,8,9,26
G	6f,2,3,4,5,27
H	6f,2,3,4,13
I	6f,2,3a,12a,4,5,27
J	6f,2,3a,12a,4,13
K	10,14,15,4,5,27
L	10,14,15,4,13
M	10,14,20,21,22,5,27
N	10,14,20,21,22,13
O	1,7A,8,9,26
P	6A,7A,8,9,26
Q	6A,2,3,4,5,27
R	6A,2,3,4,13
S	6A,2,3a,12a,4,5,27
T	6A,2,3a,12a,4,13



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Conceptual Designs – 20 Corridors

Arterial Widening Options

– options correspond to freeway alternatives

Option	Segment Composition
A	1,2,3,4,5,27
B	1,2,3,4,13
C	1,2,3a,12a,4,5,27
D	1,2,3a,12a,4,13
E	1,7f,8,9,26
F	6f,7f,8,9,26
G	6f,2,3,4,5,27
H	6f,2,3,4,13
I	6f,2,3a,12a,4,5,27
J	6f,2,3a,12a,4,13
K	10,14,15,4,5,27
L	10,14,15,4,13
M	10,14,20,21,22,5,27
N	10,14,20,21,22,13
E/O	1,7A,8,9,26
F/P	6A,7A,8,9,26
G/Q	6A,2,3,4,5,27
H/R	6A,2,3,4,13
I/S	6A,2,3a,12a,4,5,27
I/T	6A,2,3a,12a,4,13



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Conceptual Designs – 20 Options

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Third Screening Process

- ❖ Determined impacts for conceptual designs based upon design footprint utilizing GIS features
 - Impact comparison between options



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Third Screening Process

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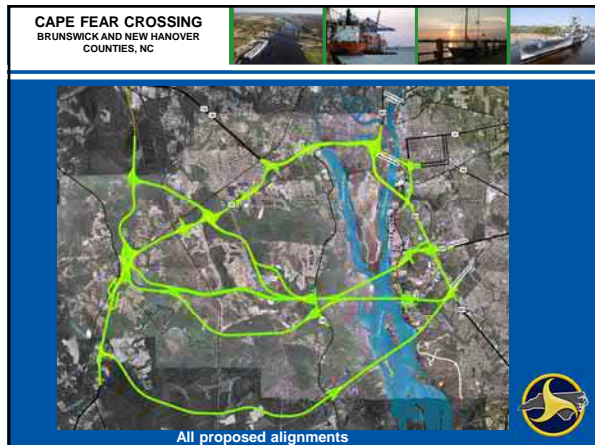
Third Screening Process

- ❖ Developed Stoney Creek avoidance alternative
 - Large amount of opposition at March 2011 public workshops
- ❖ Additional Alternatives Evaluated
 - Town of Leland Resolution alignment
 - USEPA alignment

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Stoney Creek Avoidance Alternatives (Options K, L, M, and N)





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Third Screening Process

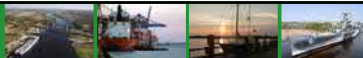
- ❖ Used Vehicle Miles Traveled (VMT)/Vehicle Hours Traveled (VHT) analysis as an additional measure of effectiveness
 - Determined performance of conceptual designs by their ability to increase average speeds within road network
 - Data will be updated with additional alignments being evaluated (Leland, USEPA, etc.)

CAPE FEAR CROSSING BRUNSWICK AND NEW HANOVER COUNTIES, NC								
VMT and VHT Analysis								
Scenario	Average Network Speed (mph)	Average Network Speed % Change	Average Network Speed (mph)	Average Network Speed % Change	Average Network Speed (mph)	Average Network Speed % Change	Average Network Speed (mph)	Average Network Speed % Change
	WMPO Area		Study Area		Brunswick County		New Hanover County	
No-Build	38.9	-	37.6	-	40.8	-	36.4	-
A/C	42.8	10.0	43.3	15.4	53.3	30.7	37.7	3.7
B/D	42.8	10.0	43.4	15.5	53.6	31.5	37.7	3.6
E	40.8	4.8	40.5	7.8	44.9	10.1	37.5	3.1
F	40.4	3.9	40.0	6.5	43.3	6.3	37.6	3.3
G/I	43.0	10.5	43.7	16.4	53.7	31.7	37.8	3.9
H/J	43.0	10.5	43.9	16.8	53.9	32.2	37.8	3.9
K	42.3	8.8	42.4	13.0	51.0	25.2	37.7	3.6
L	42.5	9.3	42.7	13.7	51.6	26.5	37.8	3.8
M	42.3	8.8	42.4	12.9	51.0	25.3	37.7	3.5
N	42.5	9.2	42.7	13.8	51.7	26.7	37.7	3.7
O	41.1	5.6	40.9	8.8	44.8	10.0	37.9	4.3
P	41.1	5.5	40.9	9.0	45.4	11.4	37.7	3.7
Q/S	42.9	10.2	43.5	15.8	53.5	31.2	37.8	3.9
R/T	42.8	10.0	43.5	15.8	53.6	31.6	37.7	3.6

CAPE FEAR CROSSING BRUNSWICK AND NEW HANOVER COUNTIES, NC								
VMT and VHT Analysis								
Scenario	Average Network Speed (mph)	Average Network Speed % Change	Average Network Speed (mph)	Average Network Speed % Change	Average Network Speed (mph)	Average Network Speed % Change	Average Network Speed (mph)	Average Network Speed % Change
	WMPO Area		Study Area		Brunswick County		New Hanover County	
No-Build	38.9	-	37.6	-	40.8	-	36.4	-
A/C	42.8	10.0	43.3	15.4	53.3	30.7	37.7	3.7
B/D	42.8	10.0	43.4	15.5	53.6	31.5	37.7	3.6
E	40.8	4.8	40.5	7.8	44.9	10.1	37.5	3.1
F	40.4	3.9	40.0	6.5	43.3	6.3	37.6	3.3
G/I	43.0	10.5	43.7	16.4	53.7	31.7	37.8	3.9
H/J	43.0	10.5	43.9	16.8	53.9	32.2	37.8	3.9
K	42.3	8.8	42.4	13.0	51.0	25.2	37.7	3.6
L	42.5	9.3	42.7	13.7	51.6	26.5	37.8	3.8
M	42.3	8.8	42.4	12.9	51.0	25.3	37.7	3.5
N	42.5	9.2	42.7	13.8	51.7	26.7	37.7	3.7
O	41.1	5.6	40.9	8.8	44.8	10.0	37.9	4.3
P	41.1	5.5	40.9	9.0	45.4	11.4	37.7	3.7
Q/S	42.9	10.2	43.5	15.8	53.5	31.2	37.8	3.9
R/T	42.8	10.0	43.5	15.8	53.6	31.6	37.7	3.6


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VMT and VHT Analysis								
<ul style="list-style-type: none"> ❖ Greatest improvement overall in network speed <ul style="list-style-type: none"> ■ Options that are hybrids of upgrade existing and new location (G, H, I, J, Q, R, S, and T) ❖ Slightly lower improvement than those above <ul style="list-style-type: none"> ■ Options that connect to I-140 (A, B, C, and D) ■ Options similar to feasibility alignment (K, L, M, and N) ❖ Least improvement in network speeds <ul style="list-style-type: none"> ■ Options that involve upgrading existing US 17 (E, F, O, and P) ❖ Data will be updated with additional alignments being evaluated (Leland, USEPA, etc.) 								

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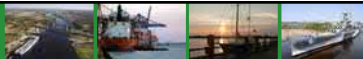


Detailed Study Alternatives Discussion


- ❖ Additional port information needed to determine Detailed Study Alternatives
- ❖ Once screening and VMT/VHT analysis is updated we will recommend Detailed Study Alternatives



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NEXT STEPS & PROJECT SCHEDULE



CAPE FEAR CROSSING
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Next Steps (short-term)

- ❖ Meet with regulatory and environmental resource agencies to determine Detailed Study Alternatives (Merger CP 2 meeting)
- ❖ Public outreach
- ❖ Screening Indirect and Cumulative Effects (ICE)
- ❖ Continue natural resources field investigations
- ❖ Traffic forecasting
- ❖ Update previous cultural resources documentation
- ❖ Functional designs



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Next Steps

- ❖ Technical Documents and Environmental Analysis
 - Natural Resources
 - Air
 - Noise
 - Cultural Resources
 - Indirect and Cumulative Effects
 - Hydraulic Analysis
 - Community Impact Assessment

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Next Steps


- ❖ DEIS – Spring 2016
- ❖ Public hearing
- ❖ Preferred alternative
- ❖ Avoidance and Minimization
- ❖ FEIS – Summer 2017
- ❖ ROD – Winter 2017

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Next Steps (Post NEPA)



- ❖ Final Design
- ❖ Financing
- ❖ Public Involvement
- ❖ ROW Plans
- ❖ ROW Acquisition
- ❖ Permitting
- ❖ Construction

CAPE FEAR CROSSING
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COUNTIES, NC



Questions?

www.ncdot.gov/projects/capefear
capefear@ncdot.gov
1-800-233-6315



Project Name
Cape Fear Crossing

Date of Meeting
9/11/2013



STIP Project #
U-4738

Location
NCDOT Transportation Building
1 South Wilmington Street, Raleigh

From:
Tracy Roberts, AICP

Purpose of Meeting
Discuss WMPO TDM Model

Time
1:00 p.m.

MEETING DOCUMENTATION

Present:

*Ron Lucas, P.E.	Federal Highway Administration
Deborah Hutchings, P.E.	NCDOT-Transportation Planning Branch
James Upchurch	NCDOT-Transportation Planning Branch
*Nora McCann	NCDOT-Transportation Planning Branch
Tae-Gyu Kim, Ph.D.	NCDOT-Transportation Planning Branch
*Patrick Riddle	NCDOT-Division 3
*Mike Kozlosky	Wilmington Urban Area Metropolitan Planning Organization
Tracy Roberts, AICP	HNTB
Bradley Reynolds, P.E.	HNTB
*Jennifer Zhan	HNTB
Joanna Rocco	URS
John Burris	URS

**participated by phone*

The following summarizes the meeting held on September 11 with the Federal Highway Administration (FHWA), the North Carolina Department of Transportation (NCDOT), the Wilmington Urban Area Metropolitan Planning Organization (Wilmington MPO) and consultants to discuss the version of the Wilmington MPO's travel demand model (TDM) to be used for the Cape Fear Crossing planning-level traffic forecast.

Introductions

- Following introductions, Tracy Roberts provided a brief project description and the schedule. He explained that the purpose of the meeting was to reach agreement on the Wilmington MPO TDM model version that would be used for the Cape Fear Crossing traffic forecast.

WMPO TDM and Planning-Level Traffic Forecast

- Bradley Reynolds explained that HNTB is preparing the traffic forecast and NCDOT is providing the traffic counts. The forecast will include a 2013 Base Year, a 2020 Interim Year and a 2035

Design Year. The 2020 Interim Year is intended to coincide with the opening of the final section of the Wilmington Bypass.

- The current assumption is that the traffic forecast will be prepared utilizing the Wilmington MPO's existing approved travel demand model. NCDOT is in the process of updating the TDM for the next update of the Wilmington MPO's long range transportation plan. James Upchurch added that base year model calibration will be completed in February 2014 and the model will be ready for use in March 2014. The new model will be completed and all documentation finalized in April 2014.
- Ron Lucas stated that the design year for the Cape Fear Crossing project should be changed to 2040 to coincide with the horizon year of the Wilmington MPO's next transportation plan. Debi Hutchings added that traffic volumes from the current 2035 TDM could be extrapolated to 2040 but cautioned that this should not necessarily be a straight-line approach.
- The new model will include transportation projects that have been completed since the current model, additional traffic analysis zones (TAZs), the expanded Wilmington MPO boundary to the north, and updated socioeconomic data. James stated that although the TAZs in the new model will increase from 290 to over 600, this largely represents a subdivision of the larger TAZs into more refined (and thus more numerous) TAZs. Mike Kozlosky added that the socioeconomic data between the current model and the new model would not be substantially different.
- Debi stated that the traffic forecast should assume all fiscally constrained projects included in the Wilmington MPO's transportation plan are constructed. The model can be run both with and without the subject project (i.e. the Cape Fear Crossing) to determine its impact on the roadway network.
- Mike added that the current Wilmington MPO's transportation plan (*Cape Fear Commutes 2035 Transportation Plan*) shows the Cape Fear Crossing project as a toll facility. James stated that although the project is not funded in the current transportation plan, scenarios with and without the project were analyzed due to the project's scope and potential to affect the roadway network. Due to the Cape Fear Crossing project not being fiscally constrained in the Wilmington MPO's current transportation plan, and that there are two highway networks (fiscally constrained with the subject project and without the subject project), Debi did not feel that a toll alternative needed to be included in the forecast.
- Tracy stated that the Preferred Alternative may be evaluated in the Environmental Impact Statement (EIS) as a potential toll facility. However, the current approach is to evaluate all alternatives as non-toll. Based on the approach to evaluate alternatives as non-toll and due to the Cape Fear Crossing project not being fiscally constrained in the Wilmington MPO's current transportation plan, the forecast will not include a toll scenario.
- John Burris stated that the existing model accounted for employee-generated traffic only at the Port of Wilmington and did not include truck freight traffic. However, there is a formula for converting freight tonnage to number of trucks and this is being used to generate truck trips to the Port. James stated that CDM Smith, the consultant under contract with NCDOT to develop the new model, will be using freight data from the statewide model in analyzing truck trips. The new model will also feature different categories of commercial vehicles.
- Mike added that the new model will not include a rail component.
- James stated that the new model will include a base year and future year and not interim years. The model will be the first in North Carolina to use Air sage data (usage of cell phone data to capture tourist trips). The model will consider peak season weekday trips and will have toll capability. A sensitivity analysis will be performed both with and without the Cape Fear Crossing project.

- When asked if NCDOT would be willing to review the traffic forecast in phases, Debi responded that this was not preferable and that it would be more efficient to review the entire forecast as a whole.

Wrap-up

- All in attendance agreed that the existing approved Wilmington MPO travel demand model was appropriate to use for the Cape Fear Crossing traffic forecast. This is consistent with NCDOT traffic forecasting procedures which state that traffic forecasts should be based on the approved model version in use at the time the forecast is prepared. Due to the socioeconomic data in the new model not varying substantially from the current model, and the fact that travel demand models are frequently updated, it was agreed to utilize the current model as it is the only model that has been approved for use in traffic forecasting at this time.
- It was agreed that the traffic forecast will include scenarios for 2013, 2020 and 2040. No toll scenario will be necessary.
- It was acknowledged that an updated traffic forecast may be prepared for the Preferred Alternative, that the forecast may include a toll scenario, and that the forecast would be based on the new model.
- The meeting concluded at 2:10 p.m.

Action Items

- URS will provide HNTB the STIP U-4434 (Independence Boulevard) traffic forecast.

The foregoing constitutes our understanding of the matters discussed and the conclusions reached. If there are any questions, corrections, omissions, or additional comments, please advise Tracy Roberts (HNTB) within five working days after receipt of these minutes.

cc: Attendees
Project File

Project Name
Cape Fear Crossing

Date of Meeting
9/11/2013



STIP Project #
U-4738

Location
NCDOT Transportation Building
1 South Wilmington Street, Raleigh

From:
Tracy Roberts, AICP

Purpose of Meeting
Discuss WMPO TDM Model

Time
1:00 p.m.

MEETING DOCUMENTATION

Present:

*Ron Lucas, P.E.	Federal Highway Administration
Deborah Hutchings, P.E.	NCDOT-Transportation Planning Branch
James Upchurch	NCDOT-Transportation Planning Branch
*Nora McCann	NCDOT-Transportation Planning Branch
Tae-Gyu Kim, Ph.D.	NCDOT-Transportation Planning Branch
*Patrick Riddle	NCDOT-Division 3
*Mike Kozlosky	Wilmington Urban Area Metropolitan Planning Organization
Tracy Roberts, AICP	HNTB
Bradley Reynolds, P.E.	HNTB
*Jennifer Zhan	HNTB
Joanna Rocco	URS
John Burris	URS

**participated by phone*

The following summarizes the meeting held on September 11 with the Federal Highway Administration (FHWA), the North Carolina Department of Transportation (NCDOT), the Wilmington Urban Area Metropolitan Planning Organization (Wilmington MPO) and consultants to discuss the version of the Wilmington MPO's travel demand model (TDM) to be used for the Cape Fear Crossing planning-level traffic forecast.

Introductions

- Following introductions, Tracy Roberts provided a brief project description and the schedule. He explained that the purpose of the meeting was to reach agreement on the Wilmington MPO TDM model version that would be used for the Cape Fear Crossing traffic forecast.

WMPO TDM and Planning-Level Traffic Forecast

- Bradley Reynolds explained that HNTB is preparing the traffic forecast and NCDOT is providing the traffic counts. The forecast will include a 2013 Base Year, a 2020 Interim Year and a 2035

Design Year. The 2020 Interim Year is intended to coincide with the opening of the final section of the Wilmington Bypass.

- The current assumption is that the traffic forecast will be prepared utilizing the Wilmington MPO's existing approved travel demand model. NCDOT is in the process of updating the TDM for the next update of the Wilmington MPO's long range transportation plan. James Upchurch added that base year model calibration will be completed in February 2014 and the model will be ready for use in March 2014. The new model will be completed and all documentation finalized in April 2014.
- Ron Lucas stated that the design year for the Cape Fear Crossing project should be changed to 2040 to coincide with the horizon year of the Wilmington MPO's next transportation plan. Debi Hutchings added that traffic volumes from the current 2035 TDM could be extrapolated to 2040 but cautioned that this should not necessarily be a straight-line approach.
- The new model will include transportation projects that have been completed since the current model, additional traffic analysis zones (TAZs), the expanded Wilmington MPO boundary to the north, and updated socioeconomic data. James stated that although the TAZs in the new model will increase from 290 to over 600, this largely represents a subdivision of the larger TAZs into more refined (and thus more numerous) TAZs. Mike Kozlosky added that the socioeconomic data between the current model and the new model would not be substantially different.
- Debi stated that the traffic forecast should assume all fiscally constrained projects included in the Wilmington MPO's transportation plan are constructed. The model can be run both with and without the subject project (i.e. the Cape Fear Crossing) to determine its impact on the roadway network.
- Mike added that the current Wilmington MPO's transportation plan (*Cape Fear Commutes 2035 Transportation Plan*) shows the Cape Fear Crossing project as a toll facility. James stated that although the project is not funded in the current transportation plan, scenarios with and without the project were analyzed due to the project's scope and potential to affect the roadway network. Due to the Cape Fear Crossing project not being fiscally constrained in the Wilmington MPO's current transportation plan, and that there are two highway networks (fiscally constrained with the subject project and without the subject project), Debi did not feel that a toll alternative needed to be included in the forecast.
- Tracy stated that the Preferred Alternative may be evaluated in the Environmental Impact Statement (EIS) as a potential toll facility. However, the current approach is to evaluate all alternatives as non-toll. Based on the approach to evaluate alternatives as non-toll and due to the Cape Fear Crossing project not being fiscally constrained in the Wilmington MPO's current transportation plan, the forecast will not include a toll scenario.
- John Burris stated that the existing model accounted for employee-generated traffic only at the Port of Wilmington and did not include truck freight traffic. However, there is a formula for converting freight tonnage to number of trucks and this is being used to generate truck trips to the Port. James stated that CDM Smith, the consultant under contract with NCDOT to develop the new model, will be using freight data from the statewide model in analyzing truck trips. The new model will also feature different categories of commercial vehicles.
- Mike added that the new model will not include a rail component.
- James stated that the new model will include a base year and future year and not interim years. The model will be the first in North Carolina to use Air sage data (usage of cell phone data to capture tourist trips). The model will consider peak season weekday trips and will have toll capability. A sensitivity analysis will be performed both with and without the Cape Fear Crossing project.

- When asked if NCDOT would be willing to review the traffic forecast in phases, Debi responded that this was not preferable and that it would be more efficient to review the entire forecast as a whole.

Wrap-up

- All in attendance agreed that the existing approved Wilmington MPO travel demand model was appropriate to use for the Cape Fear Crossing traffic forecast. This is consistent with NCDOT traffic forecasting procedures which state that traffic forecasts should be based on the approved model version in use at the time the forecast is prepared. Due to the socioeconomic data in the new model not varying substantially from the current model, and the fact that travel demand models are frequently updated, it was agreed to utilize the current model as it is the only model that has been approved for use in traffic forecasting at this time.
- It was agreed that the traffic forecast will include scenarios for 2013, 2020 and 2040. No toll scenario will be necessary.
- It was acknowledged that an updated traffic forecast may be prepared for the Preferred Alternative, that the forecast may include a toll scenario, and that the forecast would be based on the new model.
- The meeting concluded at 2:10 p.m.

Action Items

- URS will provide HNTB the STIP U-4434 (Independence Boulevard) traffic forecast.

The foregoing constitutes our understanding of the matters discussed and the conclusions reached. If there are any questions, corrections, omissions, or additional comments, please advise Tracy Roberts (HNTB) within five working days after receipt of these minutes.

cc: Attendees
Project File



Cape Fear Crossing

STIP U-4738

Brunswick and New Hanover Counties

MEETING MINUTES

Date: September 18, 2013
10:00 A.M. To 12:00 P.M.
NCDOT Century Center, Building A - Structure Design Conference Room

Project: STIP U-4738 – Cape Fear Crossing

Attendees:

*Ron Lucas, FHWA	Drew Joyner, NCDOT – PDEA – Human
Jill Stark, FHWA	Environment Section
Brad Shaver, USACE	Adam Snipes, NCDOT – State Transportation
Gary Jordan, USFWS	Improvement Program
*Terry Knowles, USCG	David Rhodes, NCDOT – Program Management
Mason Herndon, NCDENR-DWR	Benjetta Johnson, NCDOT - Congestion
*Fritz Rhode, NMFS	Management
*Chris Militscher, USEPA	Nick Lineberger, NCDOT – Congestion
Travis Wilson, NCWRC	Management
Amy Simes, NCDENR	James Upchurch, NCDOT – Transportation
*Jessi Baker, NCDENR-DCM	Planning Branch
*Stephen Lane, NCDENR-DCM	Nora McCann, NCDOT – Transportation
Steve Sollod, NCDENR-DCM	Planning Branch
*Renee Gledhill-Earley, SHPO	Kevin Fischer, NCDOT – Structures Management
Mike Kozlosky, WMPO	Shane York, NCDOT – Feasibility Studies
*Allen Sirken, Cape Fear RPO	Wendee Smith, Mulkey, Inc.
*Stephanie Ayers, NCSPA	Mark Mickley, Mulkey, Inc.
Robert Waring, Town of Leland	John Burris, URS
*Karen Fussell, NCDOT – Division 3	David Griffin, URS
Patrick Riddle, NCDOT – Division 3	Ed Edens, URS
Chris Rivenbark, NCDOT – PDEA	Joanna Rocco, URS
Jennifer Harris, NCDOT – PDEA	Susan Westberry, URS
Brook Anderson, NCDOT – Hydraulics Unit	
Gary Lovering, NCDOT – Roadway Design Unit	

**Joined meeting via telephone*

Presentation Materials:

- Agenda
- Project PowerPoint Presentation
- Alternatives Development Report (Draft, September 2013)
- Concurrence Point 2 Packet
- 06/13/13 CP 1 Meeting Summary

Purpose:

The purpose of the meeting was to review the Detailed Study Alternatives Carried Forward (DSAs) with the merger team to achieve Concurrence Point 2.

Discussion:

- USACE requested clarification on the difference between the two upgrade existing US 17 scenarios (freeway and arterial widening). It was explained that the freeway option would include access via service roads with interchanges along US 17 and the arterial widening option would include a standard widening by adding additional lanes. A typical section of the two alternatives is attached for clarification.
- USEPA noted that the Town of Leland supports the hybrid alternative suggested by USEPA that crosses Eagle Island and intersects US 421 north of the Port of Wilmington (Figure 13 in the draft Alternatives Development Report). This correspondence is appended to the meeting summary.
- Discussion regarding the alignment suggested by the USEPA:
 - The USACE does not perceive any “red flags” with this alignment utilizing Eagle Island, which is partly owned and operated by the USACE as a disposal area for dredged material.
 - The NCSPA noted that the vacant property that would be utilized by this alignment is approximately 100 acres and does not have any current uses. The NCSPA supports this alignment due to the elimination of vertical clearance restrictions for Port traffic – if an alternative is chosen south of the Port, vertical clearance restrictions remain an issue for future Port traffic.
 - SHPO noted that this alignment is a more realistic option because it avoids the City of Wilmington’s downtown historic district, which would introduce a potential Section 4(f) impact.
 - NMFS noted this alignment avoids additional impacts to fisheries.
- USEPA requested that an upgrade existing alternative in combination with multi-modal, notably rail, be studied further. NCSPA agreed that it would be worthwhile to see how incorporation of additional rail facilities would enhance access to the Port of Wilmington and reduce rail traffic on the existing network, especially in downtown Wilmington. The project team agreed that a multi-modal hybrid could be studied further, yet it would not keep the merger team from achieving CP 2. This alternative as a potential DSA could be discussed in more detail during discussions regarding CP 2A. USEPA noted that I-73 into Laurinburg (US 74 connection in South Carolina) studied an alternative that combined highway and rail.
- WMPO requested that bicycle and pedestrian accommodations be included in the study of DSAs.
- It was agreed that the TDM, TSM, Mass Transit/Multi-Modal, and TDM/TSM/Mass Transit Combination Alternatives, as presented in Section 1.3 of the draft Alternatives Development Report, could be eliminated from further consideration in the alternatives screening process.
- USFWS noted that Federal Species of Concern do not need to be included in the impact assessment for protected species. Only Federally Threatened or Endangered Species need to be included in this category.

- USEPA noted that the travel time analysis was not an important factor in eliminating alternatives; instead the team should be focusing on impacts generated from the alternatives screening only. Cape Fear RPO noted that if travel time analysis is going to be used, that the travel times for alternatives coming from the north should terminate at the north gate of the Port of Wilmington. Cape Fear RPO believed this may be a more accurate assessment of travel times. NCDOT noted that the same termini were used for all alternatives as a means to compare times in a similar fashion. If it is decided to continue studying alternatives with travel time analysis as a factor, this suggestion will be considered. NCSPA noted that all bulk and breakbulk traffic uses the north gate.
- USEPA was in favor of eliminating all alternatives that begin on the Wilmington Bypass (A, B, C, and D) due to the community of Spring Hill and the isolation effect that would potentially be had on this environmental justice community. However, WMPO was in favor of keeping the alternatives that begin on the Wilmington Bypass as this is the WMPO's preferred route to mitigate impacts to Snee Farm and Stoney Creek. The WMPO adopted a resolution in 2010 to support this alignment.
- NCSPA noted there will be design challenges with an eastern terminus at Shipyard Boulevard due to crane clearances.
- A discussion was held regarding the segments going through Brunswick Forest east of the power line (see graphic below). It was agreed to keep both options for any alternative that includes this portion in its alignment. Later in the study, it may be decided to eliminate one of these options, but at this point there is not clear agreement on one path versus the other. USACE noted that it is difficult because there are fewer wetland impacts on the alternatives that impact more (future) home sites, yet homes are not built there at this time. This can be reevaluated at a later time when more information is available from field site visits. Therefore, it was agreed that Alternatives A, B, C, D, G/Q, H/R, I/S, and J/T would not be eliminated at this time.



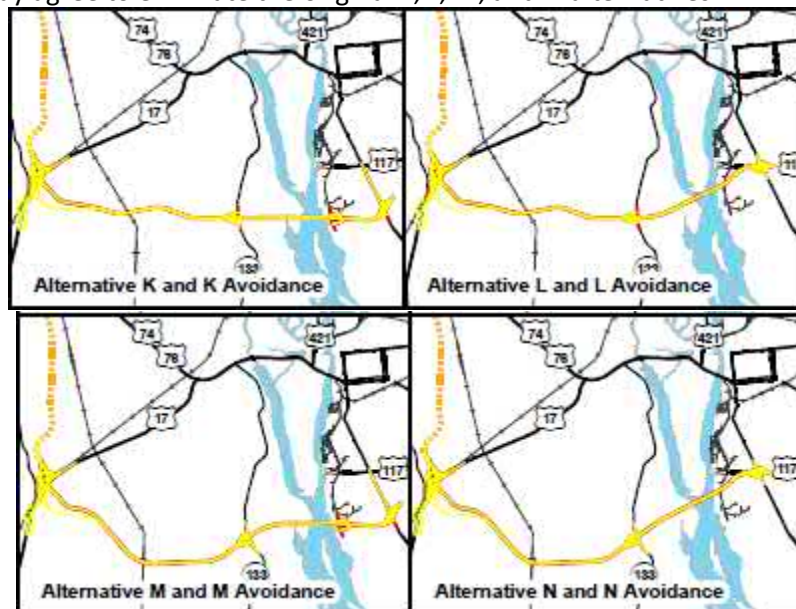
- The merger team agreed to eliminate Alternatives E and O (see graphic below) from further investigation. Both have a high degree of wetland and stream impacts and do not perform well from a travel time savings perspective.



- Except for WMPO, the merger team agreed to eliminate Alternatives U-Freeway and U-Arterial Widening from further investigation (see graphic below). USACE noted this alternative crosses Town Creek and has a high degree of impact. The FHWA, USEPA, SHPO, NCDWQ, NCWRC, and NCDQM also agreed that this alternative should not be considered further. The Town of Leland noted that the Town Council would still want this alternative considered. The WMPO would like to see this alternative studied further and will abstain from concurrence.



- The relocations between K, L, M, and N and their avoidance options will need to be reassessed, as the impact table in the alternatives report shows the residential relocation numbers as equal between each alternative and their avoidance option. If it can be shown that the avoidance alternatives do have fewer relocations, the merger team may agree to eliminate the original K, L, M, and N alternatives.



- At the conclusion of the meeting, there was consensus among the merger team to eliminate Alternatives E and O. Except for WMPO, the merger team agreed to eliminate Alternatives U-Freeway and U-Arterial Widening. NCDOT/URS will present updated/revised residential relocation impacts for Alternatives K, K avoidance, L, L avoidance, M, M avoidance, N, and N avoidance to the merger team for their consideration to eliminate Alternatives K, L, M, and N. *Update: A revised analysis based upon a more realistic ROW footprint has been developed and is appended to this meeting summary in the memorandum titled "Updated Concurrence Point 2 Recommendations."*

Action Items:

- NCDOT/URS to provide the merger team a typical section of the two upgrade existing US 17 alternatives options: freeway and standard arterial widening. *Update: the typical sections are appended to this meeting summary.*
- NCDOT/URS will present updated/revised residential relocation impacts for Alternatives K, K avoidance, L, L avoidance, M, M avoidance, N, and N avoidance. *Update: A revised analysis based upon a more realistic ROW footprint has been developed and is appended to this meeting summary in the memorandum titled "Updated Concurrence Point 2 Recommendations."*
- NCDOT/URS to develop a highway/rail hybrid alternative for discussion at CP 2A. *Update: NCDOT/URS has initiated coordination with the NCSPA regarding this and will present findings during discussions regarding CP 2A.*



MEMORANDUM

To: Meeting Attendees

From: Joanna Rocco

Date: December 16, 2013

Subject: Minutes of Meeting held November 20, 2013 at 10:00 AM
Cape Fear Crossing Project, STIP U-4738
NCSPA – 2202 Burnett Boulevard, Wilmington NC

Attendees:

Stephanie Ayers, NCSPA
Mark Blake, NCSPA
Jeff Miles, NCSPA
Mike Kozlosky, WMPO
Patrick Riddle, NCDOT

*Jennifer Harris, NCDOT
Tracy Roberts, HNTB
David Griffin, URS
Tara Murphy, URS
Joanna Rocco, URS

**joined conference via telephone*

A meeting was held with the North Carolina State Ports Authority (NCSPA) to discuss a potential project alternative requested by Chris Militscher of the US Environmental Protection Agency (USEPA) at the September 18, 2013 NEPA/Section 404 Merger Meeting. This alternative would include an upgrade existing alternative in combination with rail, and would identify how incorporation of additional rail facilities might potentially enhance access to the Port of Wilmington and reduce rail traffic on the existing rail network, especially in downtown Wilmington. Once this alternative is developed, it will be screened against the purpose and need of the project like all of the other project alternatives.

Joanna Rocco began the meeting by giving a brief overview of the current project status and the alternatives that are being recommended for detailed study.

Discussion points from the meeting are summarized below:

- NCSPA noted that prospects for growing the Port of Wilmington are dependent on high capacity rail facilities. Enhanced rail access could help to expand the market for products imported and exported through the Port. The Port sees future growth opportunities in bulk and breakbulk rather than containers assuming supportive market conditions and provided that adequate rail infrastructure is in place that would allow scalability and remove any capacity constraints.



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- NCSPA stated that from the Port and the community perspective, there is a need for an additional rail crossing over the Cape Fear River and new arrival/departure tracks. NCSPA has not conducted any feasibility studies at this point regarding adding additional rail. The Wilmington Urban Area Metropolitan Planning Organization (WMPO) noted that the North Carolina Department of Transportation (NCDOT) in conjunction with CSX is conducting a traffic separation study to look at safety and noise at 38 rail crossings within the City of Wilmington. The impression of the meeting participants was that existing rail traffic does not cause major congestion in downtown Wilmington despite slow train speed (10 mph).
- NCSPA noted they are planning for expansion of the Cape Fear River turning basin south of the Cape Fear Memorial Bridge and to the northern portion of the property owned by the Port.
- NCSPA indicated the Port plans to submit for a future TIGER grant for development of an internal corridor to connect to the north gate to relieve traffic from the adjacent public right of way (Burnett Boulevard). This would cost approximately \$17 to 19 million; therefore, federal assistance would be necessary.
- NCSPA indicated a truck interchange at the northernmost portion of the Port property as part of the alternative suggested by the USEPA would have great benefit for access to the Port.
- NCSPA noted that Moffatt Nichol completed a market study for the Port of Wilmington and will forward that study to NCDOT for their use. *Update: NCSPA forwarded a portion of Least Cost Market Area (LCMA) analysis to URS on 1/3/14.*
- NCSPA noted that an additional Cape Fear River crossing should be designed so as to not adversely impact current rail routes if rail is not incorporated as a project alternative. The road should minimize impacts to the rail network within the vicinity of the Port.
- NCSPA noted they are supportive of the alignment suggested by the USEPA, and that they do not currently have any plans for the northern property the alignment would traverse. NCSPA indicated a preference to locate this alignment (if chosen) to the northernmost edge of the NCSPA (expansion area) property. They are also supportive of a crossing south of the Port if the appropriate bridge clearances for their future market are in place. URS noted they would coordinate with the Port during design for alternatives that required a new location bridge south of the Port.
- The data provided to NCDOT by the NCSPA on truck/rail moves (Port of Wilmington Commodity/Actuals and Forecast 2012-2022) was discussed (see attached). The data shows the truck/rail split and origins and destinations of all bulk, breakbulk, and container products moving through the Port. The data show that containers are forecasted to continue being moved by truck only. Bulk and breakbulk will continue to rely on trucks for a portion of their movement.
- NCSPA noted that neither they nor the United States Army Corps of Engineers (USACE) have plans to deepen the navigational channel beyond its current depth of 42 feet.



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- NCSPA noted that the Port doesn't currently generate enough volume for CSX to allow the Port to add additional rail facilities. It is not known what volume would be needed to make rail transport an economically viable investment. Currently all containers are moved by truck, and the Port of Wilmington is primarily a truck market due to lack of intermodal rail facilities.

The meeting was adjourned at 11:15 am.



Cape Fear Crossing

STIP U-4738

Brunswick and New Hanover Counties

MEETING MINUTES

Date: December 12, 2013
10:15 A.M. To 11:30 P.M.
NCDOT Century Center, Building A - Structure Design Conference Room

Project: STIP U-4738 – Cape Fear Crossing

Attendees:

Ron Lucas, FHWA
Brad Shaver, USACE
Gary Jordan, USFWS
Mason Herndon, NCDENR-DWR
*Fritz Rhode, NMFS
*Chris Militscher, USEPA
Travis Wilson, NCWRC
Amy Simes, NCDENR
Steve Sollod, NCDENR-DCM
*Renee Gledhill-Earley, SHPO
*Mike Kozlosky, WMPO
*Karen Fussell, NCDOT – Division 3
Jennifer Harris, NCDOT – PDEA
Brook Anderson, NCDOT – Hydraulics Unit
Tris Ford, NCDOT – Human Environment Section
Adam Snipes, NCDOT – State Transportation Improvement Program
David Rhodes, NCDOT – Program Management
Phil Harris, NCDOT – Natural Environment Section
Tyler Stanton, NCDOT – Natural Environment Section

Mark Staley, NCDOT – Roadside Environmental
Cheryl Evans, NCDOT – Intelligent Transportation Systems
Nick Lineberger, NCDOT - Congestion Management
Susan Lancaster, NCDOT – Roadway Design Unit
Nora McCann, NCDOT – Transportation Planning Branch
Terry Clelland, NCDOT – Structures Management Unit
Shane York, NCDOT – Feasibility Studies
Dayton Martin, NCDOT - Utilities
Tracy Roberts, HNTB
Wendee Smith, Mulkey, Inc.
Mark Mickley, Mulkey, Inc.
John Burris, URS
Ed Edens, URS
Nick Ramirez, URS
Joanna Rocco, URS
*Susan Westberry, URS

**Joined meeting via telephone*

Presentation Materials:

- Agenda
- Project PowerPoint Presentation
- Concurrence Point 2 Packet
- 09/18/13 CP 2 Meeting Summary
- 11/20/13 Revised DSA Memorandum
- Revised Alternative Impact Table

Purpose:

The purpose of the meeting was to re-sign the Concurrence Point (CP) 1 form based on the agreement to revise the project study area and to review revised Detailed Study Alternatives Carried Forward (DSAs) recommendations as a follow-up to the September CP 2 meeting.

Discussion:

- URS began the discussion by explaining that a refined assessment had been performed on Alternatives K, L, M, and N and their avoidance alternatives. NCDOT recommended eliminating all eight of these alternatives. It was agreed amongst the Merger Team that two of the avoidance alternatives should remain for further study to compare to other alternatives; therefore, Alternative K avoidance and L avoidance (in addition to Alternatives K through N) were eliminated from further consideration and Alternatives M avoidance and N avoidance will be carried forward as DSAs.
- NCDOT clarified that Alternative V does not include upgrade/replacement of the existing Cape Fear Memorial Bridge. Alternative U assumes the existing bridge remains in place. NCDOT and the WMPO have no current plans to rehabilitate or replace the bridge. It was suggested that the new bridge should have adequate capacity to handle the additional traffic that would be generated should the Cape Fear Memorial Bridge be removed in the future.
- A discussion was held regarding the new location alternatives A through D. These alternatives begin on the Wilmington Bypass and either terminate at Shipyard Boulevard or Independence Boulevard. There was agreement amongst the Merger Team that Alternatives A and D could be eliminated from further study. This would carry forward two alternatives that begin on the Wilmington Bypass, with one terminating at Shipyard Boulevard (Alternative B) and one terminating at Independence Boulevard (Alternative C). Alternative B includes the area avoiding Brunswick Forest east of the power line, and Alternative C includes the area going through a portion of Brunswick Forest (see graphic below).



- It was agreed that there are “groups” of alternatives that have similar alignments and impacts (A through D, K through N, hybrid alternatives, etc.); therefore, it is acceptable to choose one or two alternatives that represent the differences in alignments, as discussed previously regarding Alternatives A through D. WMPO noted that both eastern termini (Shipyard Boulevard and Independence Boulevard) should remain for each “group” of alternatives.
- There was discussion regarding Alternatives A through D and their potential impacts to the environmental justice community of Spring Hill. During planning and design of the Wilmington Bypass, it was found that certain designs disrupted community cohesion and caused isolation of the community. These factors are likely to be issues for the Cape Fear Crossing project as well for Alternatives A through D, and they will need to be assessed as detailed studies progress.
- SHPO indicated that Alternative F/P would probably have an adverse effect on the City of Wilmington’s Historic District, a Section 4(f) (of the USDOT Act of 1966) resource. FHWA, NCDOT, USEPA, and the WMPO agreed that Alternative F/P could be dropped due its likely use of a Section 4(f) resource. FHWA noted that Section 4(f) regulations may prohibit the selection of Alternative F/P if right-of-way is required within the district, an adverse effect is determined for the district, and if there are other feasible and prudent alternatives that avoid the district. USACE was unsure at this time about eliminating this alternative, since USACE prefers having the upgrade existing alternative carried forward for use as a baseline to compare with the build alternatives. USACE was not able to agree at this time to eliminate these alternatives until the Section 4(f) issue could be discussed with additional USACE staff. *Update: Through coordination with the Merger Team after the meeting, it was agreed that Alternative F/P could be carried forward as a detailed study alternative since an official historic effects call for these alternatives has not yet been made.*
- Alternatives E/O and U were eliminated at the September merger meeting. It was confirmed that the Merger Team agreed to eliminate these alternatives.
- USEPA asked about the type of upgrading that will occur on US 17 as part of the upgrade existing alternative. It was explained that there are two types of upgrade facility designs being prepared for all alternatives that include a portion of US 17: standard arterial widening and freeway. An additional NCDOT project along US 17, STIP R-3601, includes adding auxiliary lanes to US 17 across the causeway, but not adding lanes for additional mainline capacity.
- USEPA reiterated that the Town of Leland supports Alternative V, which is essentially an upgrade alternative, as it includes most of US 17 until the new location bridge south of the existing Cape Fear Memorial Bridge.
- USFWS inquired about the impact numbers included for T&E species on the revised impact table. URS explained this was based on the revised Natural Heritage Program shapefiles. URS will coordinate directly with USFWS after the meeting to clarify how these numbers should be calculated. *Update: URS coordinated with USFWS regarding this issue on 12/13/13. The alternative impact table included the total amount of occurrences of T&E species within one mile. All alternatives share two occurrences (one for West Indian manatee and one for shortnose sturgeon) in the Cape Fear and Brunswick Rivers, with three separate occurrences of RCW resulting in a range of three to five occurrences for each alternative. USFWS requested the impact table be updated*

to include number of species that have records within one mile, as opposed to the actual number of occurrences.

- The hybrid alternatives (Alternatives G/Q, H/R, I/S and J/T) were not discussed at this meeting. Recommendations consistent with reasoning for determining alternatives to be studied further versus elimination will be sent to the merger team via email along with the meeting summary. *Update: Through coordination with the Merger Team after the meeting, it was agreed that hybrid alternatives H/R and I/S would be eliminated from further consideration and hybrid alternatives G/Q and J/T would be carried forward as DSAs.*
- Revised DSA recommendations will be sent to the merger team for review and concurrence via email. The updated DSA recommendations based on discussions at the meeting include the following:

Alternatives Recommended for Detailed Study (DSAs):

Alternative B
Alternative C
Alternative M Avoidance
Alternative N Avoidance
Alternative V (Freeway and Arterial Widening)

Alternatives Eliminated from Further Consideration:

Alternative A
Alternative D
Alternative E
Alternative K
Alternative K Avoidance
Alternative L
Alternative L Avoidance
Alternative M
Alternatives N
Alternative O
Alternative U (Freeway and Arterial Widening)

Recommendations for either elimination or carrying forward as DSAs will be determined during follow-up coordination with the Merger Team for the following alternatives:

Alternative F/P (upgrade existing)
Alternative G/Q
Alternative H/R
Alternative I/S
Alternative J/T

The meeting adjourned at 11:30am.

Action Items:

- USACE to follow up with the Merger Team regarding the decision whether or not to eliminate Alternative F/P. *Brad Shaver submitted his recommendation via email on 12/19/13 (see attached).*
- NCDOT to circulate the revised CP 1 form for Merger Team signatures due to the revised study area. *All signatures have been received.*
- NCDOT/URS to coordinate with Gary Jordan of USFWS regarding T&E species impact numbers. *Per coordination with USFWS on 12/13/13, NCDOT/URS will update the impact table to include the number of species that have records within one mile, as opposed to the actual number of occurrences.*
- NCDOT/URS will present updated/revised DSA recommendations in a memorandum appended to the meeting summary that will be sent to the agencies via email for review. *A memorandum with updated recommendations was sent to the Merger Team on 1/10/14.*

Update: Based on coordination with the Merger Team after the meeting, there was agreement on the following recommendations:

Alternatives Recommended for Detailed Study (DSAs):

*Alternative B
Alternative C
Alternative F/P
Alternative G/Q
Alternative J/T
Alternative M Avoidance
Alternative N Avoidance
Alternative V (Freeway and Arterial Widening)*

Alternatives Eliminated from Further Consideration:

*Alternative A
Alternative D
Alternative E
Alternative H/R
Alternative I/S
Alternative K
Alternative K Avoidance
Alternative L
Alternative L Avoidance
Alternative M
Alternatives N
Alternative O
Alternative U (Freeway and Arterial Widening)*

Rocco, Joanna

From: Shaver, Brad E SAW <Brad.E.Shaver@usace.army.mil>
Sent: Thursday, December 19, 2013 2:42 PM
To: Harris, Jennifer; Rocco, Joanna; "Lucas, Ron"
Cc: Herndon, Mason; Wicker, Henry M JR SAW
Subject: U 4738 (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Joanna/Jennifer/Ron,

I wanted to follow-up on the conversation we started last week during our Merger meeting to discuss the DSAs to carry forward for the Hampstead Bypass. I felt we did make good progress in eliminating several more alternatives thus carrying forward a reasonable range in the next step of Merger.

However, there was one more alternative that the team desired to eliminate that the Corps does not agree. It was suggested that we eliminate alternative F/P in part due to the potential for 4f impacts where the project enters into what is described as the Historic District of the City of Wilmington. The Corps believes this request would be premature without knowing where the Historic properties exist and what impacts may be requested at these locations. It's not to say that this alternative would not be dropped at other Merger points but the Corps feels like this alternative at minimum be studied such that it can be included in the administrative record, the NEPA document.

If this dissention requires a formal non concurrence please advise.

Thanks,

Brad

Brad E Shaver
Project Manager
US Army Corps of Engineers
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Wilmington, NC 28403
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Website: <http://www.saw.usace.army.mil/WETLANDS>

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Classification: UNCLASSIFIED

Caveats: NONE



MEMORANDUM

To: Meeting Attendees

From: Joanna Rocco

Date: June 19, 2014

Subject: Minutes of Meeting held May 29, 2014 at 1:30 PM
Cape Fear Crossing Project, STIP U-4738
305 Chestnut Street, Wilmington, NC – 4th floor training room

Attendees:

Work Group Members: Laura Padgett-City of Wilmington, Gary Doetsch-Town of Carolina Beach, and Joe Breault-Town of Belville

Corey Knight, WMPO
Mike Kozlosky, WMPO
Suraiya Rashid, WMPO
Pat Batleman, Town of Leland
Stephanie Ayers, NCSPA
Karen Fussell, NCDOT
Jennifer Harris, NCDOT

Jackson Provost, NCDOT
Patrick Riddle, NCDOT
Tracy Roberts, HNTB
John Burris, URS
David Griffin, URS
Joanna Rocco, URS
Susan Westberry, URS

The fourth meeting of the Wilmington Urban Area Metropolitan Planning Organization's (WMPO) Transportation Advisory Committee (TAC) Cape Fear Crossing Workgroup was held on May 29, 2014. The purpose of the meeting was to discuss various aspects of the subject project, as well as give workgroup members an update on the project since the last meeting held in July 2013.

Laura Padgett called the meeting to order and introductions took place. Workgroup members were provided with an agenda and a copy of the meeting's presentation (attached).

Joanna Rocco then gave a presentation on workgroup communication, project status, Strategic Transportation Investments, Strategic Highway Corridors, results of the vessel survey, the project Detailed Study Alternatives (DSAs), and next steps and project schedule.



Minutes of Meeting

June 19, 2014

Page 2

Discussion points from the meeting are summarized below:

- A discussion was held regarding communication between the workgroup and the project team. Laura Padgett noted that the project newsletter mailed in April 2014 should have been distributed to the workgroup before being sent to citizens. She explained that the newsletter was not written clearly enough for the general public, and that the workgroup should have reviewed it first. Jennifer Harris stated that future newsletters would be distributed to the workgroup ahead of time in order to give members time for review – it was agreed that a two-week review period was appropriate. The project team is open to feedback from the workgroup on how best to improve content that will be sent to the general public.
- Laura Padgett asked about the intent of the newsletter. Jennifer Harris explained that the purpose was to announce the narrowed list of alternatives that will be studied in detail for the Draft Environmental Impact Statement (DEIS). The environmental and regulatory resource agencies were initially presented with conceptual designs of 28 alternatives, with the agreed upon DSAs narrowed to 12 alternatives. There was also discussion on how the mailing list is developed. The mailing list is initially prepared by including all residential and commercial property owners within the project study area, with local officials and other stakeholders added. Citizens can also request to be added to the mailing list throughout project development, and any attendees of public meetings are included on the list as well.
- Laura Padgett requested that the project team look at Google Maps for items of community interest such as valuable trees important to the community, as well as any potential access issues resulting from project alternatives that need to be considered. Joanna Rocco explained that when the project team is in the field, most notably with regard to assessing impacts for the Community Impact Assessment report, observed notable features will be documented. The project team will also be conducting interviews with local planners and officials in order to determine what notable features of community interest are in the project study area. Reasonable efforts will be made to avoid notable community features and any impacts will be minimized where possible.
- A discussion was held regarding the Strategic Transportation Investments (STI). It was noted that the minimum problem statement developed by the WMPO differs from the Purpose and Need Statement agreed upon by the North Carolina Department of Transportation (NCDOT) and the Merger Team. Mike Kozlosky and Suraiya Rashid explained that the problem statement developed by the WMPO is not meant to be a full purpose and need statement, and is not used by NCDOT when ranking projects under STI. It was also discussed that, based on initial data, the Cape Fear Crossing project scored 38.38 in the statewide mobility category, 25.95 in the regional impact category, and 29.51 in the division needs category, and that the high cost of the project was likely an important factor in its relatively low score. Mike Kozlosky noted that there may be potential to split the project into phases to lower construction costs and raise scores. Once a preferred alternative has been selected (after the DEIS) and a more refined cost estimate has been prepared, it may be ranked again.
- A discussion was held regarding NCDOT's Strategic Highway Corridors (SHC). NCDOT is currently in the process of rebranding SHC to Strategic Transportation Corridors (STC), which will now include



Minutes of Meeting

June 19, 2014

Page 3

multimodal facilities (highway and rail). Mike Kozlosky noted that the draft STC currently does not include new location facilities. It was noted that the purpose and need statement for the Cape Fear Crossing project may need to be modified due to this, but it was agreed that it will not affect the project's core purpose and need as concurred with by the Merger Team since adherence to the SHC vision was included in the agreed upon purpose and need statement as a secondary benefit only.

- A discussion was held regarding results of the vessel survey that was conducted in 2013. It is being recommended by the project team to design the bridge crossings north of the Port of Wilmington with 135 feet of vertical clearance, and bridges south of the Port of Wilmington with 187 feet of vertical clearance. Stephanie Ayers stated that the North Carolina State Ports Authority (NCSPA) does not support a crossing south of the Port that will limit opportunity for growth due to vertical clearance restriction, as there may be potential in the future to attract larger vessels from the cruise industry and larger vessels due to the expansion of the Panama Canal. She also noted that while there is currently a vertical clearance constraint to the Port of Wilmington of 165 feet due to the Duke Energy powerlines, it would be less costly to relocate those lines rather than having to raise an existing bridge (if not built high enough to accommodate future vessels). Jackson Provost noted that many larger vessels require deeper channels and wider turning basins than what currently exists within the Cape Fear River; therefore, it needs to be determined if larger vessel use on the river in the future is reasonably likely. It was also noted that there are no plans to deepen the navigation channel beyond its current 42 feet. Jennifer Harris noted that the vertical clearance height of 187 feet was chosen so that functional designs can be prepared and impacts assessed. NCDOT will be reassessing the vertical clearance once a preferred alternative is chosen, and final decisions about the height of the bridge crossing will be coordinated with NCSPA, the United States Army Corps of Engineers (USACE), and the United States Coast Guard (USCG). A final decision on the navigational clearances will be made during the USCG bridge permitting process.
- The twelve DSAs were reviewed. It was noted that Alternative V assumes the existing Cape Fear Memorial Bridge remains in place. It was also noted during the discussion that there will be costs associated with each DSA. Workgroup members will be apprised of cost estimates as they are developed.
- Patrick Riddle noted that the final phase of the Wilmington Bypass is scheduled to be open to traffic in November 2017.
- Workgroup members requested that the alternative impact summary tables be available for their review once they are developed. They requested that the next Cape Fear Crossing Workgroup meeting be held before the end of 2014 to review the project status.

Action Items:

- NCDOT/URS to coordinate with Mike Kozlosky regarding the next meeting date.

The meeting was adjourned at 3:10 pm.



Cape Fear Crossing

STIP U-4738

Brunswick and New Hanover Counties

AGENDA

May 29, 2014

1:30 PM

Cape Fear Crossing Work Group – WMPO TAC
305 Chestnut Street, Wilmington, NC

- Introduction
- Cape Fear Crossing Presentation – Joanna Rocco, URS Corporation
 - NCDOT/Workgroup Communication
 - Project Status
 - Current/Upcoming Tasks
 - Strategic Transportation Investments
 - Purpose and Need (NCDOT and WMPO)
 - Preliminary project ranking and local point assignment
 - Strategic Highway Corridors (SHC) / Strategic Transportation Corridors (STC)
 - Vessel Survey Results
 - Detailed Study Alternatives
 - Next Steps & Project Schedule
- Discussion

Cape Fear Crossing

WMPO TAC Workgroup Meeting

May 29, 2014

STIP Project No. U-4738
Federal Aid Project No. STP-0017(53)
WBS No. 40114

Brunswick and New Hanover Counties, North Carolina



CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC



Agenda

- ❖ NCDOT/Workgroup Communication
- ❖ Project Status
- ❖ Strategic Transportation Investments
- ❖ Strategic Highway Corridors (SHC) / Strategic Transportation Corridors (STC)
- ❖ Vessel Survey Results
- ❖ Detailed Study Alternatives
- ❖ Next Steps & Project Schedule



CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC



NCDOT / WORKGROUP COMMUNICATION



CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC



PROJECT STATUS



CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC



Project Status

❖ Current Tasks

- Vessel Survey (completed September 2013)
- Natural Resource Investigations
 - Wetlands/Streams
 - Bird Surveys (Bald Eagle and Red-cockaded Woodpecker)
 - Natural Resources Technical Report
- Agency Coordination
 - Merger meetings in September and December to discuss Detailed Study Alternatives (DSAs)
 - DSA concurrence (CP 2) - February 2014



CAPE FEAR CROSSING BRUNSWICK AND NEW HANOVER COUNTIES, NC



Section 404 / NEPA Interagency Merger Process Concurrence Agreement Concurrence Point No. 2 –Detailed Study Alternatives Carried Forward

Cape Fear Crossing
New Hanover and Brunswick Counties, North Carolina
STIP Project U-4738

Detailed Study Alternatives Carried Forward Include:

Alternative B	Alternative J/T
Alternative C	Alternative M Avoidance
Alternative F/P	Alternative N Avoidance
Alternative G/Q	Alternative V (Freeway and Arterial Widening)

Note: Detailed Study Alternatives Carried Forward will be renumbered for evaluation in the Draft Environmental Impact Statement.

The Project Team has concurred on this date of February 10, 2014 with the Detailed Study Alternatives Carried Forward for the proposed project as stated above and shown on the attached figure.

USACE **SHAVER, BRAD.E.1**
276601756

Brad Shaver

USEPA **Chris A. 2/6/14**
Chris Millscher

NCDWR **Mason Herndon**
Mason Herndon 2-11-14

NMFS **Editz Rohde**
Editz Rohde

SHPO **Renee Gledhill-Earley**
2-10-14 Renee Gledhill-Earley

WMPO **Mike Kozlosky**
2/11/14

NCDOT **Jennifer Harris**
Jennifer Harris 2-10-14

FHWA **Ron Lucas**
Ron Lucas 2-11-14

NCWRC **Travis Wilson**
Travis Wilson 2-19-2014

NCDCM **Steve Sollod**
Steve Sollod 2/19/14

USFWS **Gary Jordan**
Gary Jordan 2/11/2014

Cape Fear RPO (see 10/25/2013 Memo)
Allen Serkin



CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
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Project Status

❖ Current Tasks

■ Newsletter No. 2

- Information regarding Detailed Study Alternatives and general project information
- Mailed to 6,055 citizens
- Citizen responses to date:
 - 23 calls to toll-free hotline
 - 5 emails
- Most feedback requesting more information on project due to concerns of proximity to property



CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC



Project Status

❖ Current Tasks

- Citizen Correspondence
- Traffic Studies
 - Traffic Forecast
 - Traffic Capacity Analysis
- Additional Alternatives Analysis
 - Rail Alternative suggested by USEPA



CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
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Project Status

❖ Upcoming Tasks

- Functional Designs
- Other Technical Documents and Environmental Analysis
 - Air
 - Noise
 - Hydraulic Analysis
 - Cultural Resources
 - Indirect and Cumulative Effects
 - Community Impact Assessment



CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC



STRATEGIC TRANSPORTATION INVESTMENTS



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BRUNSWICK AND NEW HANOVER
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Strategic Transportation Investments

❖ Differences in Purpose and Need

■ NCDOT P&N:

- Traffic capacity deficiencies
- North Carolina port access

■ WMPO P&N:

- Congestion on existing bridges
- Safety on existing bridges
- Congestion due to moveable span bridges

❖ Initial project ranking and local point assignment



CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
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STRATEGIC TRANSPORTATION CORRIDORS





Strategic Transportation Corridors

- ❖ NCDOT currently rebranding Strategic Highway Corridors (SHC) with Strategic Transportation Corridors (STC)
- ❖ STC will incorporate all transportation modes (SHC only incorporates highways)
- ❖ Adoption planned for Fall 2014
- ❖ Meeting SHC goals is secondary benefit of Cape Fear Crossing project



CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC



VESSEL SURVEY RESULTS



CAPE FEAR CROSSING BRUNSWICK AND NEW HANOVER COUNTIES, NC



Vessel Survey

❖ Methodology

- Sent survey to 350 property owners along Cape Fear and Northeast Cape Fear Rivers

- Vessel types
- Height, draft, length, etc.
- Mooring locations and vessel destinations

Cape Fear Crossing
Vessel Survey
Response Form
July 31, 2013

Vessel Information	Please provide all requested information:
Vessel type	
Use – Commercial or Recreational	
Vessel Height	
Draft	
Length	
Beam	
Tonnage	
Mooring Location	
Travel Destination(s) and Frequency	
Does your vessel ever pass under the existing Cape Fear Memorial Bridge?	

We may need to follow up with you in the future regarding the information you've provided, as additional information will assist in determining adequate bridge clearances. Please provide the following contact information (optional):

Name: _____

Address: _____

Phone/Email: _____

Please provide any comments and/or recommendations regarding the bridge horizontal and vertical clearances necessary for your commercial and/or recreational use:

Additional comments and/or recommendations:



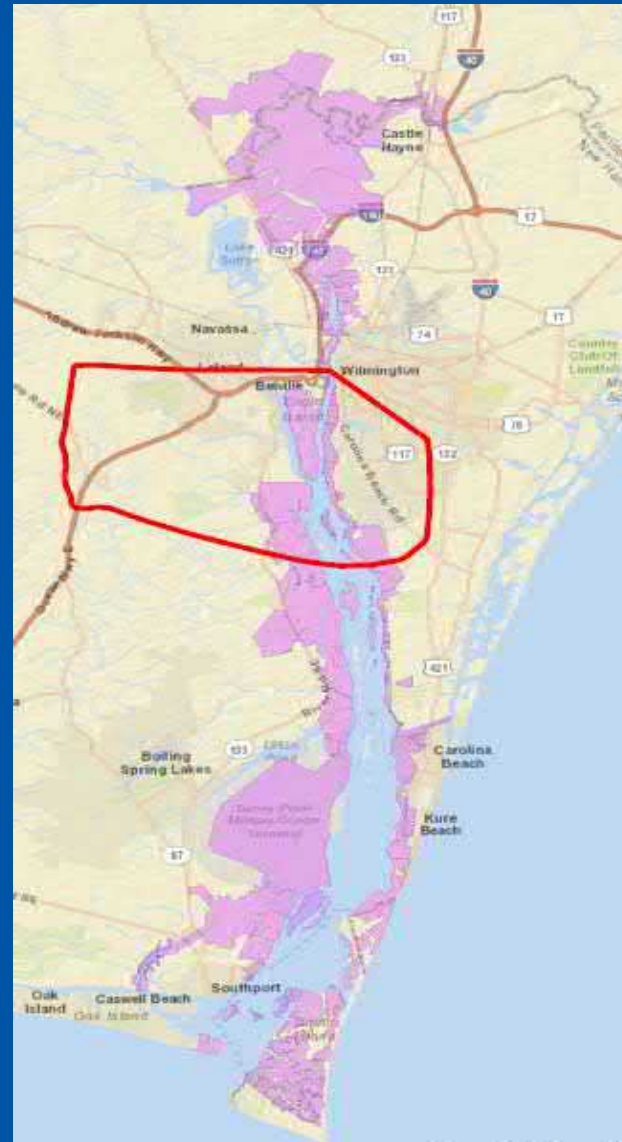
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Vessel Survey

❖ Methodology (cont.)

- Summarized recommendations
- Compared results to Preliminary Bridge Type and Location Study (March 2009)
- Conclusions on proposed bridge heights – based on survey responses and Port of Wilmington vessel use



CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC



Vessel Survey

❖ Results

- 49 responses
- Both recreational and commercial vessels
- Vessel drafts ranged from 5 feet to 38 feet
- Vessel air drafts (height) ranged from 5 feet to 160 feet
- Activity level varied (daily to annual trips)
- Some responses indicated additional vertical clearance may be needed in future



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Vessel Survey

❖ Conclusions

- Responses support preliminary recommendations made in 2009
 - Recommended vertical clearance over Cape Fear River south of the Port of Wilmington is 165 feet to 187 feet
- Responses support fixed span bridge at existing Cape Fear Memorial Bridge location with vertical clearance of 135 feet



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BRUNSWICK AND NEW HANOVER
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Vessel Survey

❖ Considerations

- Vertical air draft information for vessels very limited
- Final decisions will be closely coordinated with NCSPA, US Army Corps of Engineers, and US Coast Guard
- Responses generally support vertical clearance recommendations
- Some responses indicate support for additional clearance for growth opportunities



CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC



DETAILED STUDY ALTERNATIVES





Detailed Study Alternatives

❖ Recommendations proposed to Merger Team at September and December CP 2 meetings

- 12 DSAs total: Alternatives B, C, F/P, G/Q, J/T, M Avoidance, N Avoidance, and V (Freeway & Arterial Widening)
- Alternatives will be studied in detail in Draft Environmental Impact Statement
 - Current Activities – traffic, natural resources
 - Near Future Activities – functional designs, hydraulics, cultural resources, noise, air, community studies



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BRUNSWICK AND NEW HANOVER
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Detailed Study Alternatives

❖ All DSAs include a crossing of Cape Fear River

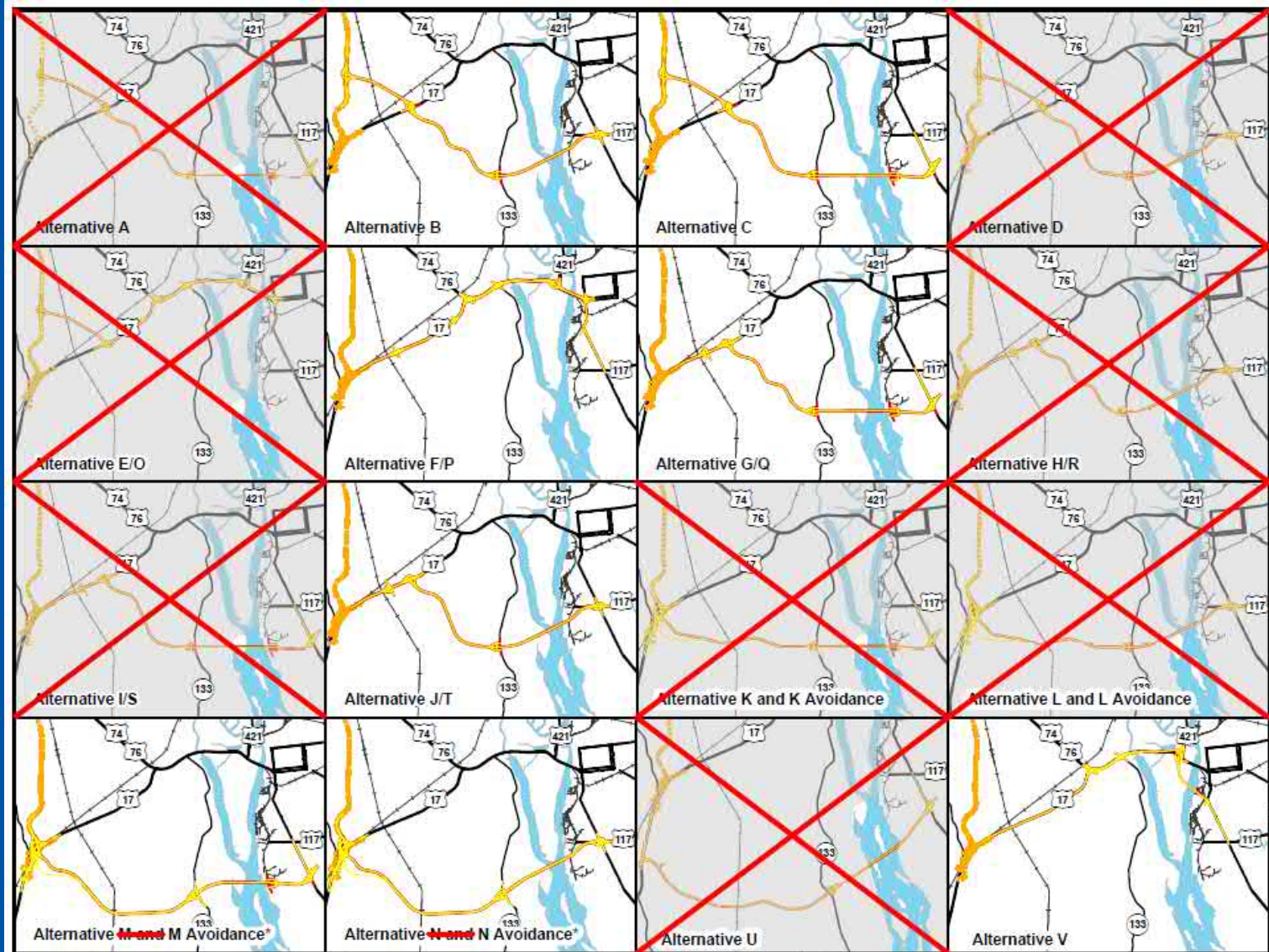
■ Fixed-span structure

■ Vertical clearance considerations:

- 135 feet for alternatives along existing US 17
- 187 feet for alternatives south of the Port of Wilmington
- Official height of bridge for final design will not be known until permitting process occurs with US Coast Guard

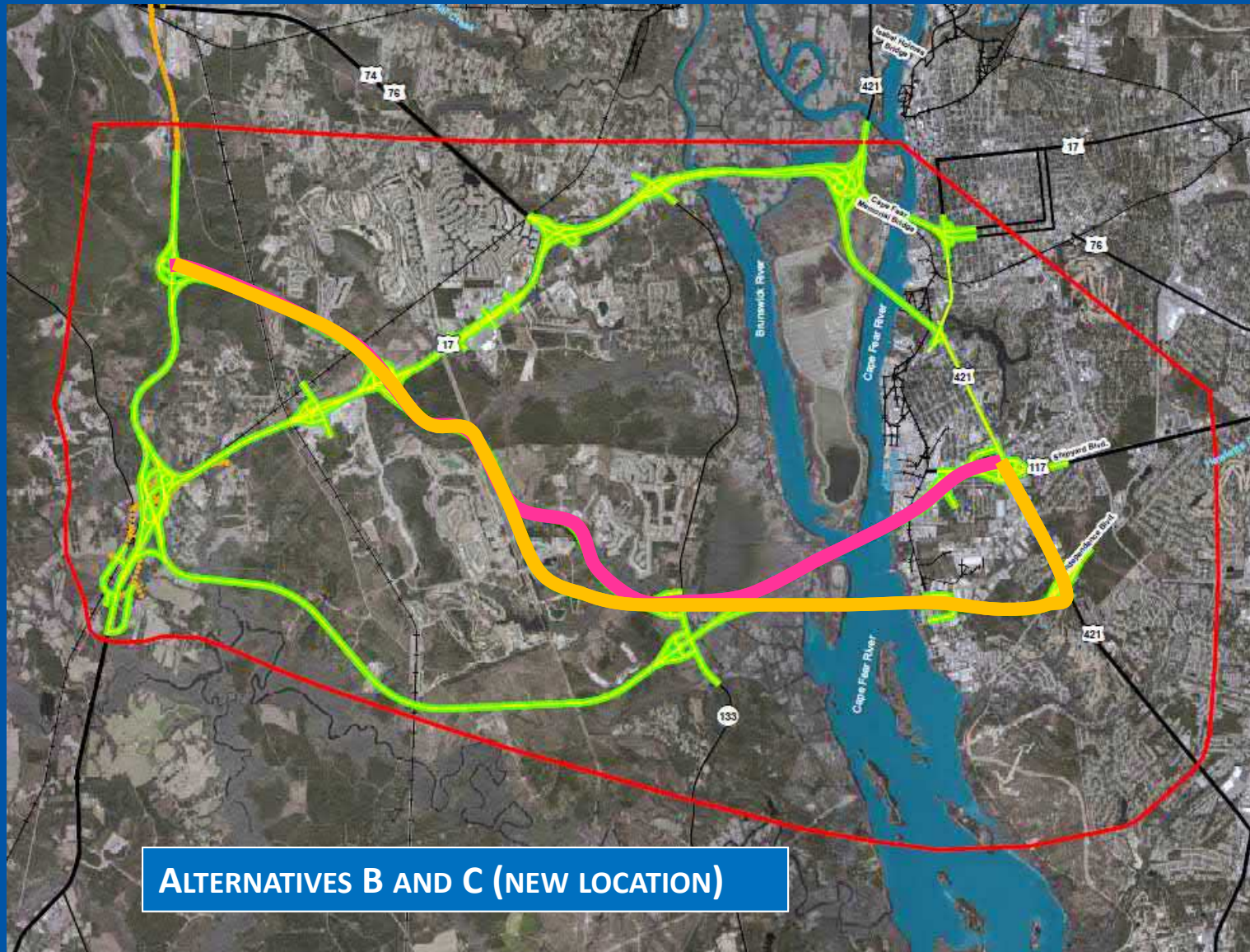


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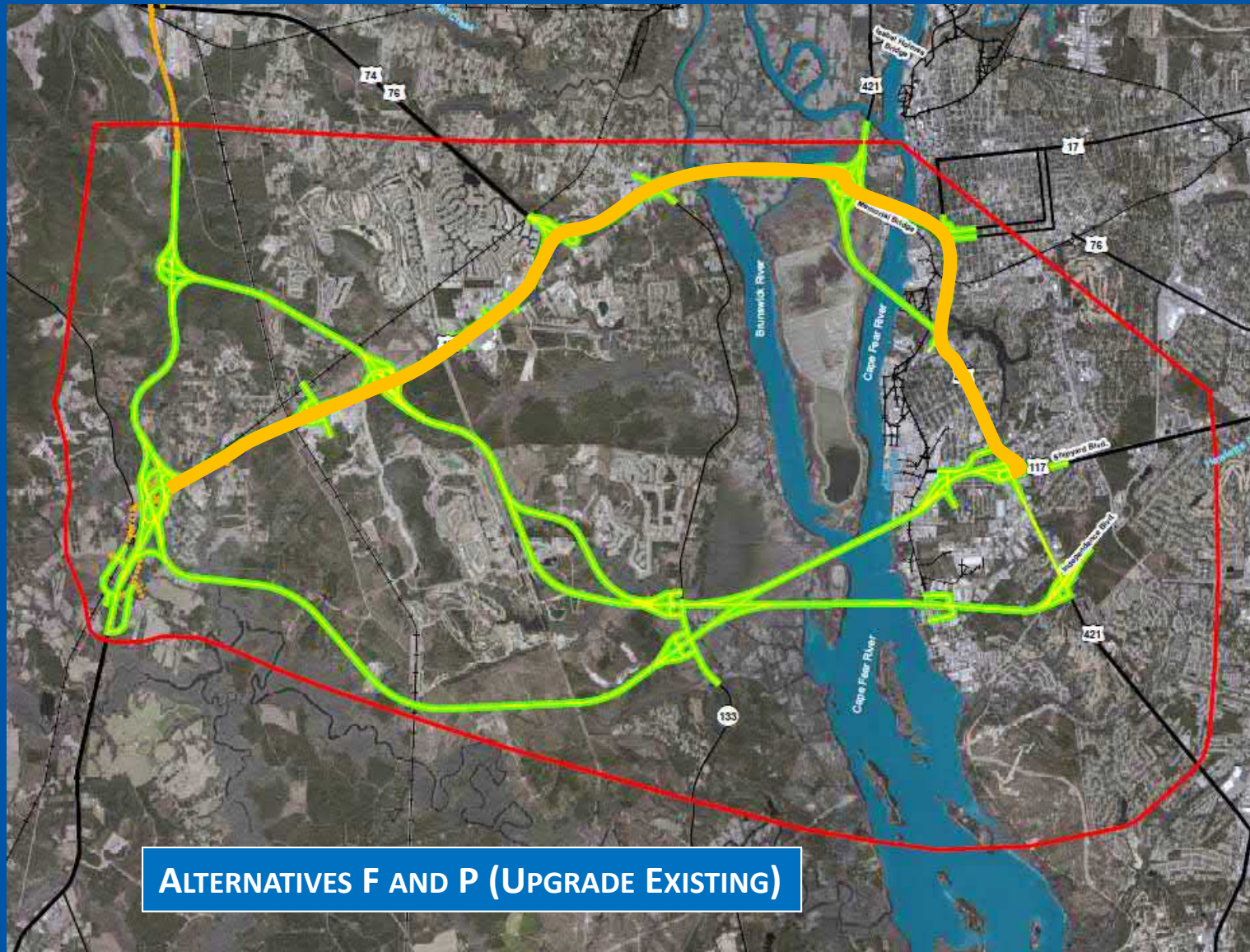


ALTERNATIVES B AND C (NEW LOCATION)



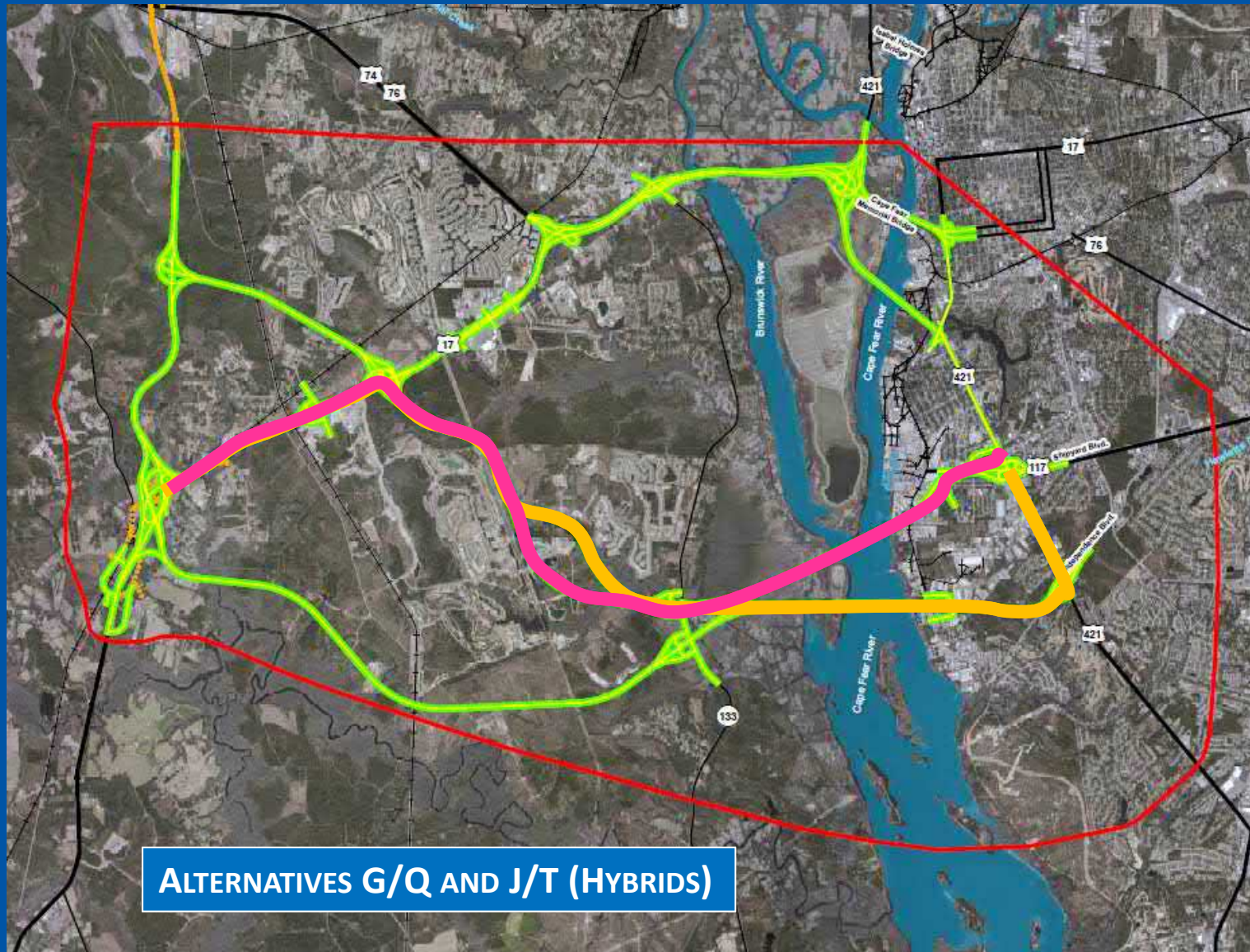
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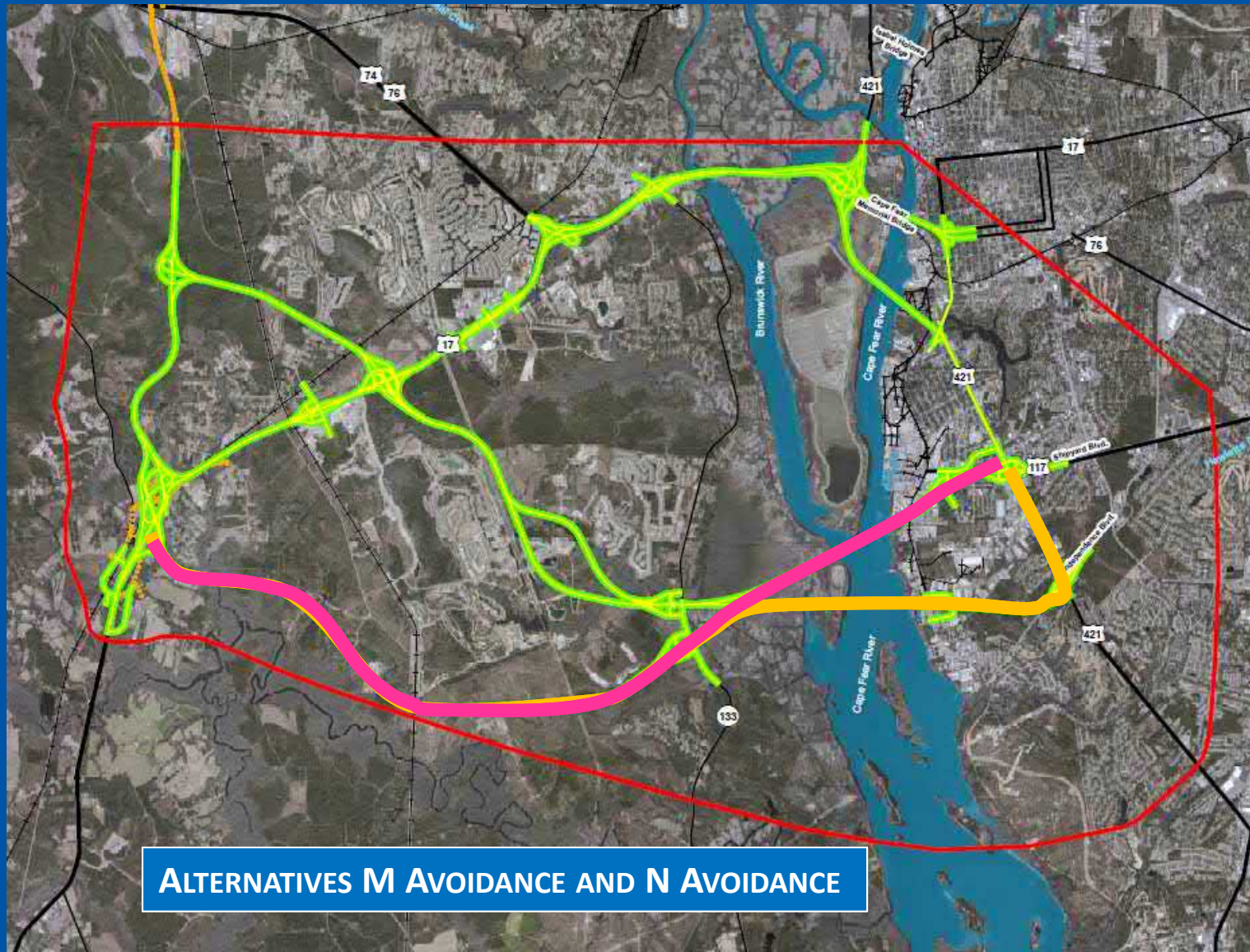
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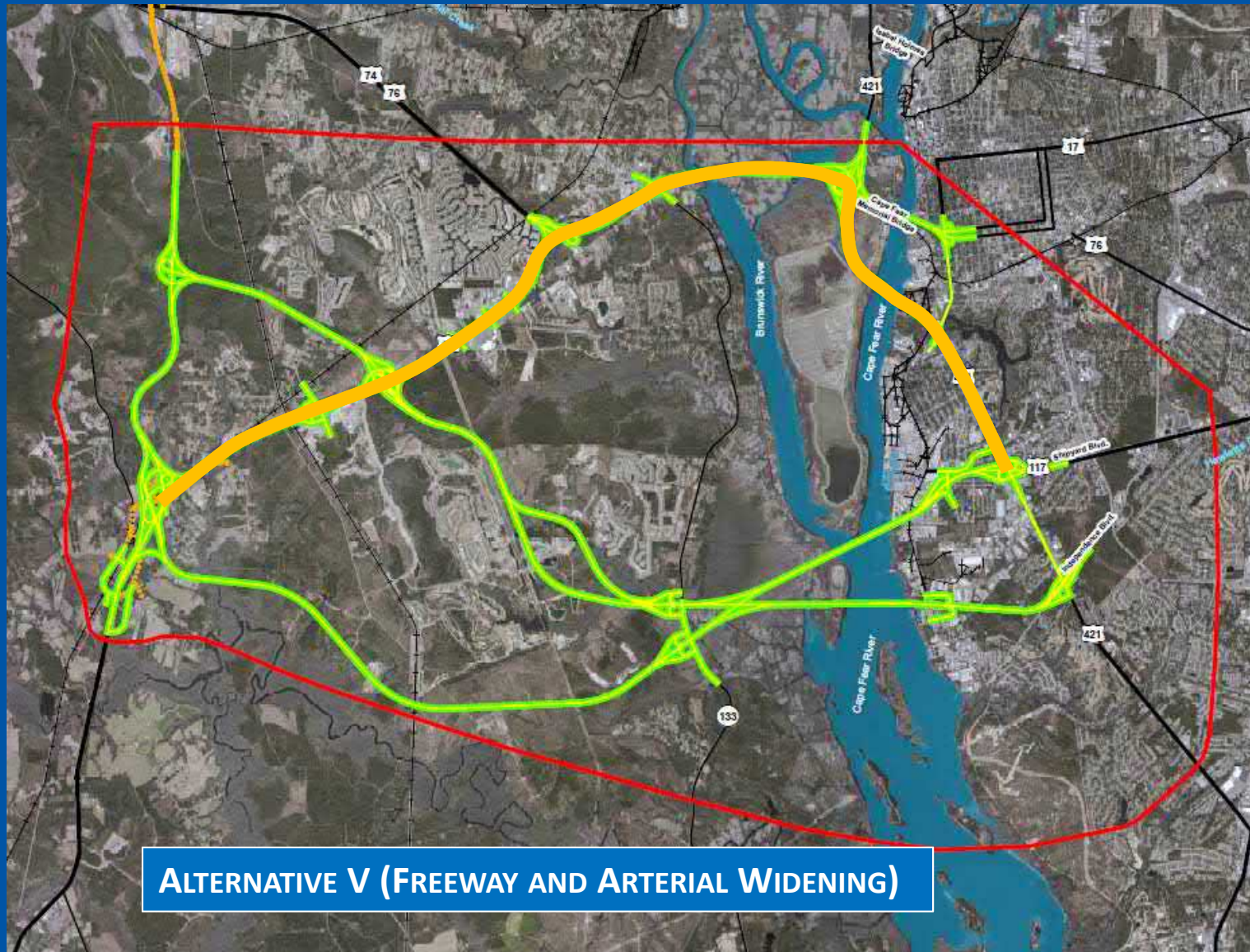


ALTERNATIVES M AVOIDANCE AND N AVOIDANCE



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ALTERNATIVE V (FREEWAY AND ARTERIAL WIDENING)



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NEXT STEPS & PROJECT SCHEDULE



CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC



Next Steps

- ❖ Continue citizen coordination
- ❖ Traffic studies and functional design
- ❖ Prepare technical studies on DSAs
- ❖ Prepare DEIS



CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC



Schedule

- ❖ DEIS – Spring 2016
- ❖ Public hearing
- ❖ Preferred alternative
- ❖ Avoidance and Minimization
- ❖ FEIS – Summer 2017
- ❖ ROD – Winter 2017



CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC



Post NEPA

- ❖ Final Design
- ❖ Financing
- ❖ Public Involvement
- ❖ ROW Plans
- ❖ ROW Acquisition
- ❖ Permitting
- ❖ Construction



CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC



Questions?

www.ncdot.gov/projects/capefear

capefear@ncdot.gov

1-800-233-6315





MEMORANDUM

To: Meeting Attendees

From: Joanna Rocco

Date: December 12, 2014

Subject: Minutes of Meeting held December 8, 2014 at 1:30 PM
Cape Fear Crossing Project, STIP U-4738
305 Chestnut Street, Wilmington, NC – 4th floor training room

Attendees:

Work Group Members: Laura Padgett-City of Wilmington, Gary Doetsch-Town of Carolina Beach, and Joe Breault-Town of Belville

Mike Kozlosky, WMPO
Suraiya Rashid, WMPO
Pat Batleman, Town of Leland
Don Messer, Citizen-Town of Leland
Karen Fussell, NCDOT
Jennifer Harris, NCDOT

Patrick Riddle, NCDOT
John Burris, URS
Ed Edens, URS
David Griffin, URS
Joanna Rocco, URS

The fifth meeting of the Wilmington Urban Area Metropolitan Planning Organization's (WMPO) Transportation Advisory Committee (TAC) Cape Fear Crossing Workgroup was held on December 8, 2014. The purpose of the meeting was to discuss various aspects of the subject project, as well as give workgroup members an update on the project since the last meeting held in May 2014.

Laura Padgett called the meeting to order and introductions took place. Workgroup members were provided with an agenda and a copy of the meeting's presentation (attached).

Joanna Rocco then gave a presentation on project status, current tasks, upcoming tasks, additional future tasks, and next steps and project schedule.



Minutes of Meeting

December 12, 2014

Page 2

Discussion points from the meeting are summarized below:

- Laura Padgett inquired when the impact matrix would be available for the workgroup's review. Jennifer Harris and Joanna Rocco explained that once designs have been finalized and we have an impact footprint, then impacts from various technical studies being done throughout 2015 will be summarized into an impact table as results are available. Wetland and stream impacts will be quantified for presentation to the Merger Team agencies at Concurrence Point (CP) 2A. If there are any design revisions necessary from the bridging decisions at CP 2A, those impacts will be revised.
- Joanna Rocco gave an overview of recent project deliverables, one of which included the Historical Architectural Report. Laura Padgett asked if the report had been reviewed by the State Historic Preservation Office (SHPO). Jennifer Harris explained the report was still under review by NCDOT but would be sent to SHPO after addressing any comments from NCDOT.
- An overview of the NEPA planning process was provided to the workgroup. Laura Padgett inquired when the next round of public meetings would be held. Jennifer Harris stated the next public meetings would be held while the Draft Environmental Impact Statement (DEIS) was out for public comment.
- Joanna Rocco gave an explanation of functional designs to the workgroup. Ed Edens and Joanna Rocco explained that the functional designs are much more detailed than the conceptual designs previously developed for the impact screening analysis used to determine the 12 Detailed Study Alternatives (DSAs).
- After reviewing the DSAs, Jennifer Harris added that bridge location field work would occur and would require a separate meeting. Joe Breault asked if bicycles and pedestrians would have access to the new bridge crossing the Cape Fear River. Karen Fussell explained that the new facility would likely have controlled access and would therefore not allow bicycles and pedestrians. Jennifer Harris noted that NCDOT is aware that the WMPO has requested these facilities be included as a part of the project and the feasibility of a multi-modal path or some type of bicycle and pedestrian accommodations will be investigated once a preferred alternative is selected. There will be cost sharing for these accommodations.
- Joanna Rocco provided an update on the status of all analyses being done that involve traffic. A traffic forecast was completed in September 2014. The traffic capacity analysis is currently underway while traffic noise and air modeling will be analyzed in 2015. Laura Padgett asked if the traffic forecast took into account that current construction of the R-3601 project, as it may cause fewer drivers to use the existing Cape Fear Memorial Bridge than normal. John Burris explained that historic traffic data is also used in the traffic forecasting process to validate forecast-specific traffic counts. Laura Padgett also asked if the increasing trend of younger generations opting for non-automobile transportation was accounted for in the traffic forecast. John Burris explained that the WMPO travel demand model used to develop the traffic forecast allows persons to choose transit as a mode of transportation. Trip generation rates can also be adjusted to account for bicycle and pedestrian trips that do not enter the area's roadway network.



Minutes of Meeting

December 12, 2014

Page 3

- Joanna Rocco stated the public could still contact NCDOT and URS with any questions about the project. One method of communication is the Cape Fear Crossing hotline. Laura Padgett asked if the hotline was listed on the WMPO website. Mike Kozlosky said it was not currently displayed on the website but would be added at Laura Padgett's request.
- Workgroup members discussed when the next meeting should be held. Joe Breault stated he preferred waiting until some of the technical studies underway are completed. Mike Kozlosky preferred the next meeting be held before the CP2A meeting so the project team could review the alternative impacts, what will be presented to the Merger Team, and any issues the workgroup want to relay to the Merger Team through Mike. Laura Padgett suggested the next meeting be scheduled for June 2015 with the understanding that adjustments may be needed to that timeframe depending on the amount of work completed.

Action Items:

- NCDOT/URS to coordinate with Mike Kozlosky regarding the next meeting date.
- Mike Kozlosky to place the Cape Fear Crossing hotline number on the WMPO webpage.

The meeting was adjourned at 3:30 pm.



Cape Fear Crossing

STIP U-4738

Brunswick and New Hanover Counties

AGENDA

December 8, 2014

1:30 PM

Cape Fear Crossing Work Group – WMPO TAC
305 Chestnut Street, Wilmington, NC


- Introduction
- Cape Fear Crossing Presentation – Joanna Rocco, URS Corporation
 - Project Status
 - Current Tasks
 - Functional Designs
 - Traffic Capacity Analysis
 - Hydraulic Analysis
 - Historic Architecture Report
 - Natural Resources Jurisdictional Determination
 - Upcoming Tasks
 - Noise/Air Analysis
 - Community Impact Assessment
 - Land Use Scenario Assessment
 - NRTR Addendum
 - Additional Future Tasks & Project Schedule
- Discussion


Cape Fear Crossing

WMPO TAC Workgroup Meeting

December 8, 2014

STIP Project No. U-4738
Federal Aid Project No. STP-0017(53)
WBS No. 40114
Brunswick and New Hanover Counties, North Carolina





CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC




Agenda


- ❖ Project Status
 - Current Tasks
 - Upcoming Tasks
- ❖ Additional Future Tasks & Project Schedule
- ❖ Discussion



CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC



PROJECT STATUS



CAPE FEAR CROSSING
 BRUNSWICK AND NEW HANOVER
 COUNTIES, NC

Project Status

- ❖ **Current Tasks**
 - Functional Designs
 - Traffic Capacity Analysis
 - Hydraulic Analysis
 - Historic Architecture Report
 - Natural Resources – additional surveys

CAPE FEAR CROSSING
 BRUNSWICK AND NEW HANOVER
 COUNTIES, NC

Project Status

- ❖ **Current Tasks**
 - Functional Designs
 - Traffic Capacity Analysis
 - Hydraulic Analysis
 - Historic Architecture Report
 - Natural Resources – additional surveys

CAPE FEAR CROSSING
 BRUNSWICK AND NEW HANOVER
 COUNTIES, NC

Project Status

- ❖ **Upcoming Tasks**
 - Noise/Air Analysis
 - Community Impact Analysis
 - Land Use Scenario Assessment
 - NRTR Addendum

CAPE FEAR CROSSING
 BRUNSWICK AND NEW HANOVER
 COUNTIES, NC

FUNCTIONAL DESIGNS

CAPE FEAR CROSSING
 BRUNSWICK AND NEW HANOVER
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NEPA Process Overview

```


graph LR
    A[Identify Purpose of and Need of Project] --> B[Collect Data on Project Study Area]
    B --> C[Analyze Preliminary Alternatives]
    C --> D[Select Detailed Study Alternatives]
    D --> E[Evaluate Impacts of Detailed Study Alternatives]
    E --> F[Publish Draft Environmental Impact Statement]
    F --> G[Public Hearings]
    G --> H[Select Preferred Alternative]
    H --> I[Publish Final Environmental Impact Statement]
    I --> J[Issue Record of Decision]
    J --> K[Purchase Right of Way]
    K --> L[Construct Project]
      
```

CAPE FEAR CROSSING
 BRUNSWICK AND NEW HANOVER
 COUNTIES, NC

Overview of Cape Fear Crossing Functional Design Development


- ❖ Conceptual designs developed initially
 - Evaluated preliminary concepts qualitatively and quantitatively
 - Eliminated conceptual alignments based on impacts and if concept did not meet purpose and need of project
 - Concepts remaining used as basis for more detailed design once Detailed Study Alternatives agreed upon

CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
COUNTIES, NC



Overview of Cape Fear Crossing Functional Design Development

- ❖ Determine Detailed Study Alternatives (DSAs) at Concurrence Point 2
 - 12 alignments agreed upon by Merger Team for further study



CAPE FEAR CROSSING
BRUNSWICK AND NEW HANOVER
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ALTERNATIVES B AND C (NEW LOCATION)



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ALTERNATIVES F AND P (UPGRADE EXISTING)









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Overview of Cape Fear Crossing Functional Design Development

- ❖ Wetland and stream delineations identified for each alternative
 - Initially within conceptual design corridor – used to prepare Natural Resources Technical Report
 - Used to avoid and minimize impacts during functional design
 - Additional areas may need survey once designs developed (if design is outside of initial survey limits)



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Overview of Cape Fear Crossing Functional Design Development

- ❖ Functional Design Development of Detailed Study Alternatives (in progress)
 - Develop within the conceptual alignment corridor established
 - Include horizontal and vertical alignments, edge of pavements, slope stakes, and right of way limits



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Overview of Cape Fear Crossing Functional Design Development

- ❖ Once designs complete, impacts will be identified and quantified
 - Human and environmental impacts
 - GIS –level analysis
 - Various technical documents
 - Utility impact coordination and utility relocation estimates
 - ROW estimates prepared
 - Initial cost estimates prepared
 - Determine bridge locations and approximate lengths




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Overview of Cape Fear Crossing Functional Design Development

- ❖ Concurrence Point 2A
 - Agreement from Merger Team on location, length, and type of crossings (bridges, culverts, etc.)
 - Identification of any changes needed in design
- ❖ Revise impacts to present for each alternative in DEIS



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Functional Design Considerations

- ❖ Recommendations for control of access
- ❖ Access to the Port of Wilmington
- ❖ Bridge crossing of Cape Fear River – clearance issues
- ❖ Access to the Battleship Memorial



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Overview of Cape Fear Crossing Traffic Analysis Development

- ❖ Traffic Forecast
 - Existing and projected traffic on existing roadway network
 - Estimation of traffic that will use new or upgraded facility
- ❖ Traffic Capacity Analysis
 - Determines amount of traffic facility can handle in the AM and PM Peak periods.
 - Operating conditions needed to accommodate projected traffic (from traffic forecast) – number of lanes, types of interchanges, etc.

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Overview of Cape Fear Crossing Traffic Analysis Development

- ❖ Tasks related to traffic include:
 - Traffic Forecast
 - Traffic Capacity Analysis
 - Traffic Noise Analysis
 - Project Level Air Quality Analysis

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Traffic Forecast

- ❖ Traffic forecasts involve the development of daily traffic volumes
- ❖ The Base Year traffic forecast is based on observed traffic counts
- ❖ The Future Year traffic forecasts involve the projection of volumes based on how the study area roadway network reacts to different alternatives using the WMPO travel demand model

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Traffic Capacity Analysis

- ❖ Traffic capacity analysis examines how the roadway network operates in the AM and PM peak time periods
- ❖ Analysis is being performed using the microsimulation software program TransModeler

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Traffic Noise Analysis


- ❖ The traffic noise analysis will identify potential noise impacts based on alternatives
- ❖ Noise abatement will be evaluated at all locations with noise impacts. Locations where noise abatement is likely and unlikely will be identified
- ❖ Noise levels are determined by modeling based on traffic volumes, speeds, vehicle mix, topography, and other factors

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Project Level Air Quality Analysis

- ❖ Air quality analysis will be performed based on federal and NCDOT reporting requirements
- ❖ The project lies in an attainment area (i.e. Brunswick and New Hanover Counties comply with EPA's national ambient air quality standards), and no detailed analysis is anticipated to be required


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ADDITIONAL FUTURE TASKS & PROJECT SCHEDULE




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Future Tasks/Next Steps

- ❖ Continue citizen coordination
- ❖ Prepare technical studies on DSAs
 - Noise/Air Analysis
 - Community Impact Analysis
 - Land Use Scenario Assessment
 - NRTR Addendum
 - Other technical studies and tasks: Hurricane Evacuation, Sea Level Rise Assessment, Section 4(f), Conceptual Mitigation Plan, Utility/ROW/Construction estimates, etc.
- ❖ Alternative impact analysis
- ❖ Prepare DEIS



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Schedule

- ❖ Bridging decisions
- ❖ DEIS – Spring 2016
- ❖ Public hearing(s)
- ❖ Preferred alternative
- ❖ Avoidance and Minimization
- ❖ FEIS – Summer 2017
- ❖ ROD – Winter 2017



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Post NEPA

- ❖ Final Design
- ❖ Financing
- ❖ Public Involvement
- ❖ ROW Plans
- ❖ ROW Acquisition*
- ❖ Permitting
- ❖ Construction*

*Unfunded for ROW and construction

CAPE FEAR CROSSING
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Questions?

www.ncdot.gov/projects/capefear
capefear@ncdot.gov
 1-800-233-6315

MEMORANDUM

To: Project File

From: Joanna Rocco

Date: December 11, 2015

Subject: Minutes of Meeting held November 12, 2015 at 10AM
Cape Fear Crossing Project, STIP U-4738
NCSPA Maritime Building Business Development Conference Room,
Wilmington NC

Meeting Attendees:

Stephanie Ayers, NCSPA
Laura Blair, NCSPA
Tolga Cankurtaran, NCSPA
Charles Cox, NCDOT-Project Development and Environmental Analysis (PDEA)
Tracy Roberts, HNTB
Joanna Rocco, AECOM

NCDOT, AECOM and HNTB project team members met with the North Carolina State Ports Authority (NCSPA) in Wilmington, NC to discuss expansion plans at the Port of Wilmington, the proposed alternative being evaluated by the project team at the request of the Wilmington Urban Area Metropolitan Planning Organization (WMPO), and to introduce Charles Cox as the new NCDOT PDEA project manager of the Cape Fear Crossing project. NCSPA members in attendance included Stephanie Ayers, the Director of Port Planning and Development; Laura Blair, the Senior Director of External Affairs; and Tolga Cankurtaran, the Director of Strategy and Performance.

Points of discussion during the meeting are below:

- Stephanie Ayers noted that the WMPO's Draft Cape Fear Transportation 2040 plan has the objective to enhance the transportation network of the Port of Wilmington by supporting freight movements. The Cape Fear Crossing project is noted as one of the projects to support these enhancements.
- Stephanie Ayers noted that the Port of Wilmington is anticipating doubling its bulk, breakbulk and container growth within the next five years.
- Stephanie Ayers noted that the NCSPA has pursued several Transportation Investment

Generating Economic Recovery (TIGER) grants to fund needed Port expansion plans. The NCSPA continues to pursue an internal North-South Corridor project to connect the north and south gates of the port to enhance freight movements and minimize congestion on the adjacent roadway network.

- Recently a draft memorandum was distributed to the NCSPA by the project team based upon a request made by the WMPO. The memorandum served to review a potential alignment as requested by the WMPO, and included five conceptual alignments that were developed using the Alternative V design and re-aligning it to either utilize the Port of Wilmington property (Myers Street) or Burnett Boulevard. Laura Blair indicated that alignments through the NCSPA property would not currently be supported by the Port. There is also concern with Alternative V, as it uses a portion of the northern NCSPA property. This property is approximately 100 acres and is anticipated to be placed on the market for sale in the near future (there is no definitive timeline). NCSPA is concerned that showing a potential roadway alignment through the property will harm its marketability. Approval would be needed from the NCSPA Board of Directors to use any property owned by the Port, as it is not deemed state property. NCSPA does not have any current uses of the property; therefore, they have been directed to sell properties not in use.
- Tracy Roberts gave an overview of the alternatives under study for the Cape Fear Crossing project, and indicated that the Merger Team concurred on the 12 Detailed Study Alternatives (which included two options of Alternative V developed as a standard widening or freeway) in February of 2014. Stephanie Ayers noted that the NCSPA was not aware at the time that Alternative V would use the northern property of the Port of Wilmington.
- Tracy Roberts asked if there were any environmental restrictions that would hinder development of the northern property. Stephanie Ayers stated this area may be difficult to develop due to soil contaminated with creosote, a chemical used in wood-treatment.
- Tracy Roberts noted that a preferred alternative for the Cape Fear Crossing is anticipated to be chosen in 2018 with publication of the Final Environmental Impact Statement; therefore, an anticipated timeline of the real estate transaction for the property is an important consideration. With selection of the preferred alternative, the 12 Detailed Study Alternatives would be narrowed to a single alternative, which may or may not be Alternative V.
- Stephanie Ayers stated the NCSPA supports the concept of Alternative V because it enhances access to the Port and would not impose vertical clearance restrictions south of the Port, but has issue with the alternative going directly through the property that they intend to market.
- Laura Blair asked that the project team provide the designs for Alternative V so that NCSPA engineers could assess whether or not an alternative in this area could be feasible. From that point, the NCSPA and the project team can work together to determine the best fit for this alternative, as it was noted this alternative appears to have local support.

- Charles Cox stated it would be worthwhile to meet again with NCDOT Division 3 to discuss further, considering a change in executive leadership for the NCSPA (Chief Executive Officer Paul Cozza was appointed in April 2014) occurred after the 12 Detailed Study Alternatives were agreed upon in February 2014. This meeting could be a potential “working session” to review the alignment with the project team and NCSPA engineering staff.
- In order to close the loop on the draft WMPO memorandum and respond to the WMPO about their requested alignment review, the project team will coordinate with Mike Kozlosky.

Action Items:

- AECOM will send NCSPA the design file, corridor boundary, and wetland/stream data for Alternative V. *Update: This information was sent to the NCSPA by AECOM on 11/13/15.*
- NCSPA engineers will assess a potential alignment for Alternative V that avoids or minimizes encroachment on the northern property and coordinate their results with NCDOT and AECOM.
- AECOM and NCDOT to coordinate with Mike Kozlosky regarding the memorandum of the WMPO’s requested alignment review.

The meeting concluded at 11:20 AM.

MEMORANDUM

To: Project File

From: Joanna Rocco

Date: February 9, 2016

Subject: Minutes of Meeting held January 8, 2016 at 10 AM
Cape Fear Crossing Project, STIP U-4738
Conference Call

Project Team Attendees:

Patrick Riddle, NCDOT Division 3
Charles Cox, NCDOT Project Development and Environmental Analysis Unit (PDEA)
Mike Kozlosky, Wilmington Urban Area Metropolitan Planning Organization (WMPO)
Tracy Roberts, HNTB
Joanna Rocco, AECOM
Celia Foushee, AECOM

The project team presented an update to Mike Kozlosky and Patrick Riddle of the outcome of the meeting held with the North Carolina State Ports Authority (NCSPA) on November 12, 2015. The purpose of the November meeting was to close the loop on the draft WMPO memorandum detailing the project team's analysis of the alignment requested by the WMPO near the Port of Wilmington, as well as discuss use of the NCSPA's northern property utilized in the draft functional designs for Alternative V.

Tracy Roberts discussed the Port's concerns regarding Alternative V using vacant land owned by the Port, as the NCSPA intends to market this land. Tracy noted we are still waiting to hear back from NCSPA engineers who requested the designs for Alternative V so they could assess whether or not an alternative in this area could be feasible.

Joanna Rocco noted the Port stated that if we could minimize impacts of Alternative V to the property in a way that would be acceptable to the Port and NCDOT, then this alternative could potentially be feasible.

Charles Cox noted there were other concerns that surfaced in the November 2015 meeting that would create several challenges with dealing with the Port property. The project team is planning to coordinate further with the NCSPA in this regard. Stephanie Ayers noted they

would get in touch with the project team in early January to further discuss the designs of Alternative V, and if they suggest any revisions.

Joanna noted the NCSPA stated the requested WMPO alignment concepts are not feasible. The memorandum prepared by the project team includes explanations detailing traffic issues with these concepts, issues associated with the purpose and need of the project, and additional work associated with the merger and NEPA processes. The Port's concern with the marketability of their northern property is not a sufficient reason for an alignment to not be feasible. It was agreed that AECOM will provide a conclusion to the memorandum that indicates the alignments are not recommended due to these issues, as well as recent coordination with the NCSPA. This will be submitted to Mike Kozlosky so he can provide this information to the WMPO Transportation Advisory Committee.

Action Items:

- AECOM to prepare a conclusion paragraph in the draft WMPO memorandum describing why the five conceptual alignments on Alternative V are not recommended for additional study.
- AECOM/NCDOT to coordinate with Stephanie Ayers of the NCSPA regarding their review of the Alternative V design and its use of the northern Port property. Once the project team has heard back from the NCSPA, they will engage the WMPO and NCDOT Division 3. *Update: Stephanie Ayers of the NCSPA contacted Joanna Rocco on 2/2/16 indicating the NCSPA cannot make the alignment work using their northern property at the Port of Wilmington. They do support alternatives that use Shipyard Boulevard, as long as the alternatives do not impact the gate and/or operation of the Port.*

The meeting concluded at 10:30 AM.

MEMORANDUM

To: File

From: Celia Foushee

Date: February 10, 2016

Subject: Minutes of Meeting held February 5, 2016 at 11 AM
Cape Fear Crossing Project, STIP U-4738
Conference Call

The project team met with the North Carolina State Ports Authority (NCSPA) on November 12, 2015 to discuss North Carolina Department of Transportation (NCDOT) State Transportation Improvement Program (STIP) project number U-4738, Cape Fear Crossing. The NCSPA noted concern with Alternative V, as it uses a portion of two vacant parcels owned by the NCSPA at the northern end of the Port of Wilmington property (see attached figure). This property is anticipated to be placed on the market for sale in the near future and the NCSPA is concerned that showing a potential roadway alignment through the property will harm its marketability. NCSPA does not have any current uses of the property; therefore, they have been directed to sell properties not in use.

As part of an effort to review ways to avoid the vacant property owned by the NCSPA, the project team reviewed the draft functional designs for Alternative V (freeway and widening options) to determine if there were any feasible options to avoid the northern property. The purpose of this memorandum is to provide a high level review of options to shift the current alignment from where it is currently proposed and determine if any of these options are feasible from an impact and design standpoint.

Four options were developed realigning Alternative V east of the US 421 interchange, therefore realigning how Alternative V crosses the Cape Fear River, as well as where it terminates on US 421. All options were developed with a vertical clearance the same as Alternative V (135 feet). Two options realign Alternative V more north of its existing proposed location, and two options realign to the south.

Options 1 and 2 (North of NCSPA vacant property)

Options 1 and 2 shift the proposed alignment of Alternative V to the northern end of the vacant parcels. They would terminate at the current intersection of US 421 and Kidder Street (Option 1) or US 421 and Martin Street (Option 2). Several limitations exist with these options as they would introduce an undesirable curved section of bridge within the limits of the proposed bridge structure. Also, in order to meet desirable bridge grade of four percent this alignment would require raising the roadway of 3rd Street and Greenfield Street between 10 and 20 feet for inclusion of the proposed interchange at the terminus of this alternative. The interchange would increase impacts to provide the same level of movement needed to handle the 43,600 vehicles per day forecasted at this location in 2040 (for this alternative). Additionally, Option 2 would increase impacts to dredge cells located on Eagle Island that are used by the United States Corps of Engineers. The Front Street and the Port of Wilmington Railroad line would be grade separated with this option.

Options 3 and 4 (South of vacant parcels)

Options 3 and 4 would shift the proposed alignment of Alternative V south by extending the alignment further into Eagle Island. Option 3 would encroach on the vacant parcels slightly, while Option 4 would follow the southern edge of the property and avoid the northern part of the NCSPA property near the existing access road off Burnett Boulevard. These options could likely meet desirable grade limits for the bridge structure and provide similar traffic movements to that which is currently proposed at the US 421 (Carolina Beach Road) terminus for Alternative V; however, this would create additional relocation impacts to the area between US 421 and Burnett Boulevard. Additionally, these options also appear to bisect a different vacant NCSPA parcel to the east of the silos. The Front Street and the Port of Wilmington Railroad line would be grade separated with these options.

Based on the analysis above, the project team has determined the most feasible alignment for Alternative V is the one agreed to by the Merger Team at Concurrence Point 2, Detailed Study Alternatives Carried Forward, on February 10, 2014.

M E E T I N G S U M M A R Y

To: Project File

From: Celia Foushee
AECOM

Date: December 21, 2016

Subject: Section 106 Effects Meeting Summary
Cape Fear Crossing Project, STIP U-4738
NCDOT Century Center Building B, PDEA Conference Room (CCB)

Meeting Attendees:

Renee Gledhill-Earley
Donnie Brew, FHWA
Mary Pope Furr, NCDOT
David Hinnant, NCDOT
Jay McInnis, NCDOT
Samantha Matta, NCDOT

Tracy Roberts, HNTB
Adam Archual, HNTB
Neil Dean, AECOM
Celia Foushee, AECOM
Joanna Rocco, AECOM

The project team met on December 8, 2016 to discuss with the State Historic Preservation Office (HPO) and Federal Highway Administration (FHWA) the effects of the proposed Cape Fear Crossing project on the historic resources within the study area. The project team presented an informational packet to HPO and FHWA that included:

- an impact table with the acreage of right of way impacts the proposed Cape Fear Crossing project would have on each of the 8 historic resources by alternative,
- a resource information sheet with the historic resource and associated impacts anticipated, including physical impacts, noise, access, utilities, drainage, parking, and retaining walls, and;
- figures of each resource that show the historic property boundary and the right of way for each alternative that would potentially affect the resource.

Discussions during the meeting are summarized below:

USS North Carolina Battleship

Mary Pope Furr began the meeting with discussions of the USS North Carolina Battleship. David Hinnant displayed the visualizations of Alternatives F and P from this resource. Renee Gledhill-Earley questioned the height of the proposed replacement of the Cape Fear Memorial Bridge. It was noted the proposed bridge height is 135 feet to allow clearance for the largest vessel that travels up the river. Regarding access to the resource, it was noted the access would shift slightly; however, overall access would not be impacted. Ms. Gledhill-Earley did not make an effect call on the potential impacts incurred from Alternatives F and P to this resource; she said she wanted to hear the opinions of others. Based on the proposed distance of Alternatives F and P from this resource, it was noted noise would not likely be an impact at this location. Ms. Gledhill-Earley requested NCDOT send the visualization

rendering of the proposed bridge for further discussions. David displayed the visualizations of Alternatives V-F and V-AW from this resource. This would include an additional crossing of the Cape Fear River south of the existing bridge, with the Cape Fear Memorial Bridge remaining in place. It was noted the viewshed would not change for these alternatives; however, access would change due to traffic volumes. Proposed access would be safer than the existing. Ms. Gledhill-Earley agreed on a “no adverse effect” call for these alternatives on the resource. For the remaining alternatives, a “no effect” call would be made.

Wilmington Historic District

Ms. Gledhill-Earley noted an “adverse effect” call would be made for Alternatives F and P on this resource due to visual effects and right of way takes. For Alternatives V-F and V-AW, it was noted there would be right of way takes; however, it is unclear if this would include structure impacts. NCDOT will further investigate if there are any structures proposed to be removed due to this alternative and, if so, whether they are contributing elements to the historic district. It was also noted that Burnett Boulevard would be elevated in order to go over the railroad. Additional detail is needed for Ms. Gledhill-Earley to determine the effects call for Alternatives V-F and V-AW. Ms. Gledhill-Earley agreed a “no effect” call would be made for the remaining alternatives.

Lake Forest Defense Housing

Ms. Gledhill-Earley noted a “no adverse effect” call would be made for Alternatives F, P, V-F, and V-AW and a “no effect” call on the remaining alternatives.

Sunset Park

It was noted the portion of US 421 adjacent to Sunset Park is included as part of the historic district, but there is no indication that the road is a contributing element of the district. For Alternatives F, P, V-F, and V-AW, the current alignment would impact the structure at 2110 Carolina Beach Road, which is likely a contributing building. Furthermore, these alternatives would likely impact the neighborhood entrance structures and grassed median within the neighborhood on Northern Boulevard and Central Boulevard. The project team will determine if the alignment can be moved north to reduce impacts to the properties along US 421 within the Sunset Park historic district. Ms. Gledhill-Earley agreed a “no effect” call would be made for the remaining alternatives.

Wilmington National Guard Armory

Ms. Gledhill-Earley noted that as long as Alternatives F, P, V-F, and V-AW did not impact the building or access to the building from US 421, then a “no adverse effect” call could be made. The project team will determine if impacts to the resource would occur once the alignment has been shifted north per the request for reducing impacts to the Sunset Park Historic District. Ms. Gledhill-Earley agreed a “no effect” call would be made for the remaining alternatives.

Hanover Heights

It was noted the southern boundary of the Hanover Heights Historic District along US 421 may be shown incorrectly. NCDOT will investigate the correct boundary and note any changes to HPO and FHWA. For Alternatives B, J, T, and N Avoidance, additional access within the neighborhood is proposed which would increase impacts within the resource. The project team will investigate how to continue to provide access to Constitution Boulevard and Southwood Road without impacting the historic district. Ms. Gledhill-Earley agreed a “no effect” call would be made for Alternatives C, G, Q, and M Avoidance and a “no adverse effect” call would be made for Alternatives F, P, V-F, and V-AW.

Devereux H. Lippitt House or Clarendon Plantation

Ms. Gledhill-Earley agreed a “no effect” call would be made for all alternatives.

Goodman House

Ms. Gledhill-Earley agreed a “no effect” call would be made for all alternatives.

Action Items

- NCDOT to send the visualization rendering of the proposed bridge for Alternatives F and P to HPO for further discussions. *Update: NCDOT provided the visualizations presented during the meeting to HPO on 12/08/2016.*
- NCDOT will further investigate if there are any structures proposed to be removed within the Wilmington Historic District due to Alternatives V-F and V-AW.
- The project team will determine if the alignment for Alternatives F, P, V-F, or V-AW can be moved north to reduce impacts to the properties along US 421 within the Sunset Park historic district.
- The project team will determine if impacts to the Wilmington National Guard Armory from Alternatives F, P, V-F, or V-AW would occur if the alignment is shifted north in order to reduce impacts to the Sunset Park Historic District.
- NCDOT will investigate the correct boundary for the Hanover Heights historic district and note any changes to HPO and FHWA.
- The project team will investigate how to continue to provide access to Constitution Boulevard and Southwood Road in Alternatives B, J, T, and N Avoidance without impacting the Hanover Heights historic district.

The meeting adjourned at 10:45 AM. A summary of the preliminary effects calls made are summarized in the table below.

Preliminary Section 106 Effects Calls (12/8/16)								
Resource	B	C	F/P	G/Q	J/T	M Avoidance	N Avoidance	V Arterial and V Freeway
USS North Carolina	No Effect	No Effect	Unresolved	No Effect	No Effect	No Effect	No Effect	No Adverse Effect
Wilmington Historic District*	No Effect	No Effect	Adverse Effect	No Effect	No Effect	No Effect	No Effect	Unresolved
Lake Forest Defense Housing Historic District	No Effect	No Effect	No Adverse Effect	No Effect	No Effect	No Effect	No Effect	No Adverse Effect
Sunset Park Historic District	No Effect	No Effect	Unresolved	No Effect	No Effect	No Effect	No Effect	Unresolved
Hanover Heights	Unresolved	No Effect	No Adverse Effect	No Effect	Unresolved	No Effect	Unresolved	No Adverse Effect
Wilmington National Guard Armory	No Effect	No Effect	Unresolved	No Effect	No Effect	No Effect	No Effect	Unresolved
Devereux H. Lippit House or Clarendon	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect
Goodman House and Doctor's Office	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect

* Alternatives F and P collectively have 0.14 acre of easement impacts to the Wilmington Historic District.

MEETING SUMMARY

To: Project File

From: Celia Foushee
AECOM

Date: March 20, 2017

Subject: Project Status call with Wilmington MPO
Cape Fear Crossing Project, STIP U-4738
NCDOT Century Center Building B, PDEA Conference Room (CCB)

Meeting Attendees:

Mike Kozlosky, WMPO*
Jay McInnis, NCDOT PDEA
Tracy Roberts, HNTB

Celia Foushee, AECOM
Joanna Rocco, AECOM

*Joined via telephone

The project team met on March 7, 2017 to discuss with the Wilmington Urban Area Metropolitan Planning Organization (WMPO) the upcoming Transportation Advisory Committee (TAC) meeting to be held in Wilmington on March 29, 2017 and the project status. The project team gave a brief overview of the presentation materials to be presented at the meeting and discussed the overall project status. It was noted the project impact information prepared for this meeting will also be used in the upcoming Concurrence Point (CP) 2A Merger Meeting, which will likely be scheduled the second week of May. A summary of the discussion points and action items are identified below.

- The WMPO noted there will not be a time limit on the presentation to the TAC.
- The TAC is expecting to receive a spreadsheet identifying the project impacts. *Update: Mike Kozlosky called AECOM and requested they receive a copy ahead of time, by Friday March 24th if possible.*
- It was noted the WMPO TAC voted to allocate \$750,000 dollars this year towards completing the Draft Environmental Impact Statement (DEIS). Additional funding, anticipated to be another \$750,000, will be voted on next year.
- The Rail Realignment Feasibility Study is underway and expected to be presented to the council in April. It is expected the TAC may ask how the rail realignment will affect U-4738. A question which might be asked is if a rail could be incorporated into the roadway bridge. Two public meetings were recently held regarding the rail realignment. WMPO expects to have a draft of the rail realignment feasibility study March 27th. Wayne Hyatt, with Moffitt and Nichol, was identified as a contact for information regarding this study. *Update: AECOM has requested any draft reports or graphics from Mark Hamel of Moffitt and Nichol and a response is pending.*
- It was noted the WMPO was recently asked to eliminate the Cape Fear Crossing Project and move forward with a project to only upgrade the Cape Fear Memorial Bridge.

- It was noted CP2A will provide an opportunity for the agencies to eliminate alternatives. If the project team determines there are alternatives that may be dropped, this will be further discussed with the TAC.
- It is unclear if studying the additional alternative suggested by members of the WMPO TAC near the Port of Wilmington is still an active request by the TAC. This will be further discussed at a high level within the Powerpoint presentation. Suggestion was to explain it was looked at and wasn't found to be feasible.
- The TAC will not be issued the Powerpoint presentation prior to the meeting.

The meeting concluded at 10:00 a.m.

MEETING SUMMARY

To: Project File

From: Celia Foushee
AECOM

Date: April 12, 2017

Subject: State Historic Preservation Office, Effects Meeting Follow-up
Cape Fear Crossing Project, STIP U-4738
Wilmington, North Carolina

Meeting Attendees:

Renee Gledhill-Earley, HPO
Mary Pope Furr, NCDOT HES
Jay McInnis, NCDOT PDEA

Celia Foushee, AECOM
Joanna Rocco, AECOM
Neil Dean, AECOM

The project team conducted a field meeting in Wilmington on March 27, 2017 to discuss with the State Historic Preservation Office (HPO) the effects determination of the proposed Cape Fear Crossing project on five historic resources within the study area: USS North Carolina Battleship for Alternatives F and P, Wilmington Historic District for Alternatives V-F and V-AW, Sunset Park for Alternatives F, P, V-AW, and V-F, Wilmington National Guard Armory for Alternatives F, P, V-AW, and V-F, and Hanover Heights for Alternatives B, J, T, and N Avoidance. This field meeting was a follow up to the meeting held on December 8, 2016 with HPO and Federal Highway Administration (FHWA), in which an effects determination was unresolved for the aforementioned historic resources. A summary of the discussion points and effects calls are identified below.

USS North Carolina Battleship: Alternatives F and P

It was noted an “adverse effect” call would be made for Alternatives F and P due to visual impacts of the proposed fixed span bridge replacing the Cape Fear Memorial Bridge.

Wilmington Historic District: Alternatives V-AW and V-F

It was noted an “adverse effect” call would be made for Alternatives V-AW and V-F due to right-of-way impacts to contributing houses within the historic district along 3rd Street. It was noted impacts to the South Front Apartment buildings, which were also identified as contributing to the historic district, could potentially be minimized through design changes at the intersection of Greenfield Street and Front Street.

Sunset Park: Alternatives F, P, V-AW, and V-F

It was noted a “no adverse effect” call would be made for Alternatives F, P, V-AW, and V-F if implementing conceptual designs which maintain the existing curb and gutter line on the west side of US 421 (Carolina Beach Road). It would be necessary to ensure that proposed sidewalk would maintain the existing offset or less to avoid impacts to Sunset Park.

Wilmington National Guard Armory: Alternatives F, P, V-AW, and V-F

It was noted a “no adverse effect” call would be made for Alternatives F, P, V-AW, and V-F under the conditions that NCDOT would move the flag pole if necessary and provide a sign perpendicular to US 421 (Carolina Beach Road). It was noted the sign should include the same font as displayed on the building.

Hanover Heights Historic District: Alternatives B, J, T, and N Avoidance

It was noted a “no adverse effect” call would be made for Alternatives B, J, T, and N Avoidance under the condition that the large plantings in front of the Cape Fear Presbyterian Church along Shipyard Boulevard would be replanted if impacted during construction. After reviewing the functional designs, access would no longer be provided to Holbrooke Avenue through the historic district. Furthermore, the corrected historic boundary was reflected on the mapping, which eliminates impacts to the historic district along US 421 (Carolina Beach Road).

A summary of the effects calls made are summarized in the table below.

Preliminary Section 106 Effects Calls (12/8/16 and 3/27/17)								
Resource	B	C	F/P	G/Q	J/T	M Avoidance	N Avoidance	V Arterial and V Freeway
USS North Carolina	No Effect	No Effect	Adverse Effect	No Effect	No Effect	No Effect	No Effect	No Adverse Effect
Wilmington Historic District*	No Effect	No Effect	Adverse Effect	No Effect	No Effect	No Effect	No Effect	Adverse Effect
Lake Forest Defense Housing Historic District	No Effect	No Effect	No Adverse Effect	No Effect	No Effect	No Effect	No Effect	No Adverse Effect
Sunset Park Historic District	No Effect	No Effect	No Adverse Effect	No Effect	No Effect	No Effect	No Effect	No Adverse Effect
Hanover Heights	No Adverse Effect	No Effect	No Adverse Effect	No Effect	No Adverse Effect	No Effect	No Adverse Effect	No Adverse Effect
Wilmington National Guard Armory	No Effect	No Effect	Unresolved	No Effect	No Effect	No Effect	No Effect	No Adverse Effect
Devereux H. Lippit House or Clarendon	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect
Goodman House and Doctor's Office	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect

* Alternatives F and P collectively have 0.14 acre of easement impacts to the Wilmington Historic District.

MEMORANDUM

To: Project File

From: Celia Foushee

Date: May 8, 2017

Subject: Pre-CP2A Meeting
Cape Fear Crossing Project, STIP U-4738
NCDOT Century Center Building A, Structures Conference Room (C)

Project Team Attendees:

Ron Lucas – FHWA*	Tracy Roberts – HNTB
Paul Atkinson – NCDOT, Hydraulics	Mark Mickley – CALYX
Jay McInnis – NCDOT, PDEA	Meme Buscemi – AECOM
Kevin Moore – NCDOT, Roadway	Neil Dean – AECOM
Chris Rivenbark – NCDOT, NES	Celia Foushee – AECOM
Karen Collette – NCDOT, Division 3*	Joanna Rocco – AECOM
Chad Kimes – NCDOT, Division 3*	Elizabeth Wargo – AECOM
Alan Pytcher – NCDOT, Division 3*	

*indicates attendance by phone.

The project team met on April 10, 2017 to discuss with the Federal Highway Administration (FHWA), the North Carolina Department of Transportation (NCDOT), and NCDOT Division 3 the upcoming NEPA/Section 404 Merger Team Concurrence Point (CP) 2A meeting, scheduled May 30-31, 2017. It was suggested the office portion of the merger meeting may be able to occur during the regularly scheduled NEPA/Section 404 Merger Team meetings. Tracy Roberts will determine if there is availability for the project team to present CP 2A at the next merger meeting, which is scheduled for May 10, 2017 (*Update: the tentative time available is 10:30 to 12pm and 1pm to 2:30. The May 30/31 dates may be used for the field visits, if necessary.* The project team reviewed the draft presentation and packet materials that will be presented at the meeting. A summary of the discussion points and action items (in bold) are identified below.

- Joanna Rocco convened the meeting with the PowerPoint presentation (see attached). It was noted the vicinity map slide does not need to reflect the feasibility study alignment. **AECOM will revise the vicinity map shown in the presentation to remove the feasibility study alignment.** A discrepancy was also noted in which the Draft Environmental Impact Statement (DEIS) date presented in the presentation does not

match the packet information. The project website indicates a Fall 2017 completion date. **AECOM will revise the presentation and the packet to reflect the same schedule for the DEIS.**

- During the presentation, it was noted the Cape Fear River is listed as proposed critical habitat for sturgeon. Marine fisheries will need to provide their input regarding this designation, and whether or not a formal Section 7 consultation will be needed for the project. **AECOM will add an essential fish habitat assessment consultation, to be prepared by CALYX, into the project schedule.** It was noted plant surveys are up to date. It was also noted that Red- cockaded woodpecker (RCW) impacts would occur only if Alternatives B or C were selected as the Preferred Alternative. A known RCW cluster is located within a half-mile of the western terminus of Alternatives B and C at the proposed interchange with I-140. It was questioned why a foraging habitat assessment (FHA) would not be completed after the Preferred Alternative was selected, since that impact could affect the merger team's decision at CP 3. **Chris Rivenbark will discuss when a FHA is needed with Tyler Stanton.**
- It was questioned why there are freeway and arterial widening options for each alternative, since the freeway alternatives tend to have higher impacts. It was discussed a travel time study was completed and members of the merger team requested that both widening options be studied for the purpose of comparing impacts and travel benefits. The Traffic Capacity Analysis was examined to better understand the differences in the travel time savings per widening alternative. **AECOM will simplify the findings of the traffic report in a benefits table for each alternative that compares Measures of Effectiveness.**
- It was noted the Wilmington Metropolitan Planning Organization (WMPO) Technical Advisory Committee (TAC) is meeting on April 26, 2017 to discuss the impacts and come to an agreement on alternatives the WMPO would support dropping if any may potentially be removed from further study.
- During the presentation of the hydraulic crossings, it was noted where there are no impacts to streams or wetlands, zero (0) acre should be used as opposed to "N/A".
- It was noted at Sites 22 and 23, anything previously considered as an impact from the construction of I-140 was not included in the impacts.
- On the Environmental Constraints figures, **AECOM will enlarge and differentiate by color the bridge and culvert symbols.**
- It was noted at all bridge crossings, impacts should be calculated for wetlands as well. Furthermore, **AECOM will provide additional backup information (not part of the 2A bridge lengths) regarding the necessary bridge length that would be required to span the entire wetland with no impacts if that becomes a requirement in the future.**
- On the hydraulic site crossing figures, **AECOM will revise the bridge notes to read only the total bridge lengths rather than the number of spans.**
- **AECOM will verify that all wetlands and streams within an interchange are presumed to be impacted even if outside the slope stakes plus 40 feet limits.**
- It was noted sites 25 and 37 are tributary waters and therefore should not be included in the linear feet of impacts. **CALYX will verify this is accurate and AECOM will remove**

sites 25 and 37 from the hydraulic structures tables and impacts.

- The project team will follow-up with the merger team members prior to the May 10th meeting to solicit input on any sites they may want to visit in the field.
- An additional figure will be prepared for each Cape Fear River crossing that shows the entirety of the bridge crossing, in addition to the individual site plan sheets.
- Stream impacts at Site 14 will be verified.
- Wetland boundary at Site 30 will be verified.

The meeting concluded at 3:30 pm.



Cape Fear Crossing

STIP U-4738

Brunswick and New Hanover Counties

MEETING SUMMARY

Date: May 30, 2017
9:00 A.M. To 5:30 P.M.
NCDOT Division 3 Office, Conference Room and various sites in Brunswick County

Project: STIP U-4738 – Cape Fear Crossing

Attendees:

Ron Lucas – FHWA
Monte Matthews - USACE
Brad Shaver – USACE Wilmington
John Policarpo – USACE Charleston
Gary Jordan – USFWS
Ken Riley – NOAA, NMFS
Fritz Rohde – NOAA, NMFS
Joanne Steenhuis – NCDWR
Travis Wilson – NCWRC
Cathy Brittingham – NCDCM
Stephen Lane – NCDCM
Curt Wemchert – NCDCM
Stephanie Ayers – NCSPA
Brook Anderson – NCDOT Hydraulics
Paul Atkinson – NCDOT Hydraulics
Jason Dilday – NCDOT NES
Madisyn Elam – NCDOT, NES Intern

*Kevin Moore – NCDOT Roadway
Mason Herndon – NCDOT Division 3
Katie Hite – NCDOT Division 3
David Leonard – NCDOT Division 3
Jay McInnis – NCDOT PDEA
Gary Doetsch – WMPO
Mike Kozlosky – WMPO
Pat Batleman – WMPO Transportation Board
Brenda Bozeman – Town of Leland
Mark Mickley – CALYX
Tracy Roberts – HNTB
Meme Buscemi – AECOM
Neil Dean – AECOM
Morgan Foster – AECOM
Celia Foushee – AECOM
Joanna Rocco – AECOM

**Joined meeting via telephone*

Presentation Materials:

- Agenda
- Project PowerPoint Presentation
- Concurrence Point 2A Packet
- Detailed Study Alternatives Figure and Impacts

A meeting was held at 9:00 am on Tuesday, May 30, 2017 at the NCDOT Division 3 office in Castle Hayne. The purpose of this meeting was to present project information to the Merger Team in order to obtain concurrence on Concurrence Point (CP) 2A: Bridging Decisions and Alignment Review and to discuss the alternatives and associated impacts. Attendees of the meeting are shown above. A merger packet was distributed to meeting attendees.

Jay McInnis began the meeting by stating the meeting's purpose and initiating introductions. Joanna Rocco gave a presentation on the following information:

- Purpose of the meeting
- Project study area
- Purpose and need
- Project status
- Schedule
- Project alternatives
- Water resources
- Major hydraulic structures
- Project impacts
- Travel time benefits

Discussion points from the meeting are summarized below:

- The Federal Highway Administration (FHWA) noted that if the project does not get funded for right of way or construction in the first four years of the STIP, FHWA cannot sign the Record of Decision (ROD). FHWA further stated that in order to sign the Final EIS, there must be demonstrated progress toward securing funding.
- It was questioned why travel time benefits were not included in the impact table. The project team will add this information to the alternative comparison table for inclusion in the Draft Environmental Impact Statement (DEIS). During this discussion, it was noted the Traffic Forecast and Highway Capacity Analysis will be updated for the Preferred Alternative. The Wilmington MPO anticipates a new travel demand model will be in place next year.

Discussion regarding potential elimination of alternatives was held. Discussion points from this conversation are summarized below:

- Alternatives F, P, VA, and VF have impacts to Section 4(f) resources and therefore FHWA would not be able to select any of these alternatives as the preferred alternative since there are alternatives that meet the purpose and need that do not use Section 4(f) resources. Alternatives F and P are also controversial due to impacts to the Wilmington Historic District.
- Alternatives F and P have lower construction costs; however, right of way costs would likely be higher due to the dense residential and business development. Right of way cost estimates are currently being prepared by NCDOT for all alternatives.
- Coastal Area Management Act (CAMA) regulated wetlands have been delineated, but have not been finalized. Impacts to CAMA wetlands will be determined and included on the impact table included in the DEIS. CAMA wetland boundaries will be depicted on figures prior to the CP 3 "Least Environmentally Damaging Practicable Alternative (LEDPA)/Preferred Alternative Selection".

- The Wilmington Urban Area Metropolitan Planning Organization's (WMPO) Board held a workshop on 4/26/17 to discuss alternatives they would support dropping if the merger team agreed to eliminate any from further consideration. It was noted the WMPO Board would support dropping Alternatives J, T, F, P, VA, and VF. A resolution will be included on the WMPO's June 28, 2017 Board Meeting agenda identifying Alternatives MA and NA as the WMPO's preferred alternatives. *Update: the WMPO Board adopted the proposed resolution supporting Alternatives MA and NA as the WMPO's preferred alternatives for the Cape Fear Crossing project. The resolution is attached.*
- The Port of Wilmington recently requested the height of the proposed bridge for alternatives that cross the Cape Fear River south of the Port to be designed with a navigational clearance of 215 feet. It was noted that Duke Progress Energy is preparing a feasibility study to raise the height of the existing powerlines across the Cape Fear River to 235 feet. The powerlines south of the Port are currently the only vertical clearance constraint for vessels calling on the Port of Wilmington.
- It was noted in the impacts table, there are impacts to "Lands managed for conservation". Additional information regarding specifics of this impact was not readily available at the meeting. The project team will determine where lands managed for conservation are located in relation to the project. USFWS was particularly interested in knowing the conservation purpose for Eagle Island.
- Additional information regarding the number of historic parcels that would be impacted by Alternatives F, P, VA, and VF was request by the merger team.
- It was noted Alternatives VF and VA have higher wetland impacts due to the fill required on Eagle Island. However, if the segment on Eagle Island is bridged, wetland impacts could be reduced by approximately 30 acres.
- NCDCM noted that even if Section 4F did not apply, the HPO is still a commenting agency for the CAMA Permit. Whether the preferred alternative is consistent with the local land use plan is also a consideration during the CAMA permitting process.
- It was mentioned the southern river crossings (Alternatives B, C, G, J, M, N, Q, and T) would affect critical fish habitat.
- A discussion was held regarding whether or not it was appropriate to eliminate Alternatives F, P, VA, and VF at this time due to their Section 4(f) impacts. It was noted Alternatives VF and VA were suggested by the US Environmental Protection Agency (USEPA) (the USEPA was not present at the CP 2A meeting). The Merger Team suggested tabling the discussion of eliminating alternatives for a separate meeting in which the USEPA would be able to attend.

Joanna Rocco began discussing the hydraulic crossing sites and recommended hydraulic structures. It was noted the recommended structure is based on the findings in the Hydraulic Analysis Report (2016); however, in a few instances, designs recommended a bridge structure as opposed to a culvert due to surrounding structures (locations east of NC 133 were proposed to be bridged as a result of the proposed Cape Fear River crossing bridge structure). At each site, the proposed impacts to each water resource, wetland rating, and the proposed structure were identified. It was noted the NC Wetland Assessment Methodology (WAM) was not evaluated on the wetland sites, because the wetland delineations were performed prior to WAM forms being required.

New culverts or the extension of existing culverts are proposed at the following sites: 1, 2, 2A, 4, 5, 6, 7, 8, 14, 15, 16, 18, 19, 22, 23, 26, 27, 44 and 46. The merger team had no objections to the proposed

culverts at Sites: 1, 7, 8, 14, 15, 16, 18 and 46. It was noted Sites 7, 8, 14, 15, 16 and 46 all have existing culverts downstream. Gary Jordan mentioned Sites 22 and 23 are in an area where there is the potential to affect federally-listed red-cockaded woodpeckers.

Bridges are proposed at the following sites: 3, 10, 11, 11A, 12, 13, 24, 28, 29, 30, 33, 34, 35, 36, 40, 41, 42, 43 and 45. Sites 20, 21, 38, and 39 involve widening existing bridges. The merger team had no objections to the recommended bridge lengths at Sites 13, 24, 33, 35, 36, 38, 39, 41, 42 and 43.

The Merger Team adjourned the office portion of the meeting at 11:30 am. The team reconvened for the field portion of the meeting at 1:00 pm. During the meeting, the Merger Team requested to visit Sites 2, 2A, 3, 4, 5, 6, 10, 28, 29, and 30. Discussions held in the field regarding the aforementioned sites are summarized below:

- Sites 2 and 2A: Bridging is preferred, if practical to reduce impacts to wetland and stream. **Existing:** none; **Recommendation:** triple barrel culvert (at each site); **Requested:** bridging alternate preferred; approximate 215-foot bridge at Site 2 and approximate 672-foot bridge at Site 2A. *Update: Subsequent to the CP2A meeting, design investigations recommend a bridge at 520 feet at Site 2 and a bridge at 660 feet at Site 2A to span the main wetlands.*
- Site 3: The proposed structure is a 565-foot bridge based on the FEMA non-encroachment standards. A bridge at approximately 978 feet long would be required to span the entire wetland. This was requested by the Merger Team. Shifting the alignment to the south through a more narrow area of wetlands should be discussed further at CP 4A. **Existing:** none; **Recommendation:** bridge at 565 feet long; **Requested:** approximate bridge at 978 feet long. *Update: Subsequent to the CP2A meeting, design investigations recommend a bridge at 980 feet to span the wetlands.*
- Sites 4, 5, and 6: Impacts to habitat and constructability in the wetland were topics of concern at these sites. **Existing:** none; **Recommendations:** triple barrel culvert at Site 4, double barrel culvert at Site 5, and single barrel culvert at Site 6; **Requested:** keep recommended structures.
- Site 10: It was determined this site should be bridged to avoid impacts to the CAMA wetlands. **Existing:** none; **Recommendation:** various bridge lengths depending on alternative; **Requested:** bridge lengths are to be determined depending on location of the CAMA wetlands.
- Site 28: The main wetland should be bridged. **Existing:** none; **Recommendation:** bridge at 165 feet long; **Requested:** bridge spanning the main wetland at approximately 575 feet long. *Update: Subsequent to the CP2A meeting, design investigations recommend a downstream bridge at 440 feet and an upstream bridge at 510 feet to span the wetlands.*
- Sites 29 and 30: It was determined this was a high quality wetland and a bridge structure should span the main system. **Existing:** none; **Recommendation:** bridge at 410 feet at Site 29 and bridge at 355 feet at Site 30; **Requested:** Site 29 bridge at approximately 750 feet long and Site 30 bridge at approximately 768 feet long to span the main wetland system (not wetland fingers). *Update: Subsequent to the CP2A meeting, design investigations recommend a bridge at 800 feet at Site 29 and a bridge at 770 feet at Site 30 to span the main wetlands.*

Wetland impacts due to bridge piles typically do not require mitigation. Impacts associated with installing bridge piles need to be shown at CP 4C.

Action Items:

- The project team will add the travel time benefits to the alternative comparison table.
- Impacts to CAMA wetlands will be determined and included on the alternative comparison table. CAMA wetland boundaries will be depicted on figures prior to the CP 3 “Least Environmentally Damaging Practicable Alternative (LEDPA)/Preferred Alternative Selection”.
- The project team will determine bridge lengths at Site 10 to avoid impacts to CAMA wetlands.
- The project team will determine where impacts to lands managed for conservation are located in relation to the project impacts and update the alternative comparison table accordingly.
- The project team to provide additional information regarding the number of historic parcels that would be impacted by Alternatives F, P, VA, and VF and update the alternative comparison table accordingly.
- The project team will follow up with the NEPA/Section 404 Merger Team regarding potential elimination of alternatives and concurrence on bridging decisions. This will include submittal of the revised alternative comparison table to the merger team including the requests as noted above.
- The project team will provide additional information regarding changes in impacts and costs (e.g. costs associated with changing a culvert to a bridge) for sites where structures were requested to be changed.
- The project team to submit revised bridge layouts to NCDOT for review.

**Section 404 / NEPA Interagency Merger Process Concurrence Agreement
Concurrence Point No. 2A – Bridging Decisions and Alignment Review**




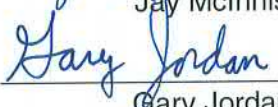
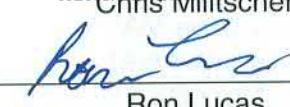
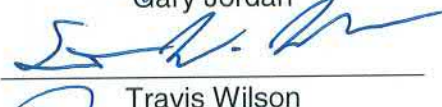
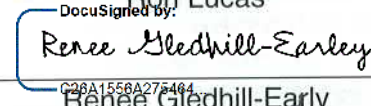

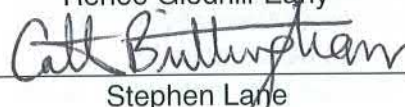
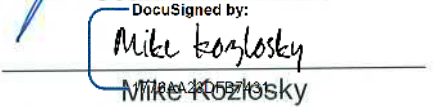
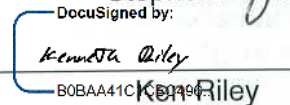
**Cape Fear Crossing
New Hanover and Brunswick Counties, North Carolina
STIP Project U-4738**

Hydraulic structures of at least the length or size indicated below will be provided for the project. Revisiting CP2A decisions may occur if needed during the normal CP4A Avoidance and Minimization Merger Team Meeting.

Crossing #	Recommended Hydraulic Structure
1	Extend 3 @ 8x6 RCBC
2	Bridge at 520 feet to span wetlands.
2A	Bridge at 660 feet to span main wetlands.
3	Bridge at 980 feet to span wetlands.
4	3 @ 6x6 RCBC
5	2 @ 6x6 RCBC
6	1 @ 6x6 RCBC
7	1 @ 6x6 RCBC
8	1 @ 8x6 RCBC
10	Span CAMA wetlands.
11	Bridge at 15,705 feet (Alternatives B, J, T); 16,353 feet (Alternatives C, G, Q); 16,403 feet (Alternative MA); 15,842 feet (Alternative NA)
11A	Bridge at 15,705 feet (Alternative B, J, T); 16,353 feet (Alternative C,G,Q); 16,403 feet (Alternative MA); 15,842 feet (Alternative NA)
12	Bridge at 16,353 feet (Alternatives C, G, Q); 16,403 feet (Alternative MA)
13	Bridge at 16,353 feet (Alternatives C, G, Q); 16,403 feet (Alternative MA)
14	3 @ 6x6 RCBC
15	2 @ 6x6 RCBC
16	2 @ 6x6 RCBC
18	3 @ 8x6 RCBC
19	3 @ 8x6 RCBC
20	Widen Existing Bridge
21	Widen Existing Bridge
22	1 @ 8x6 RCBC
23	1 @ 8x6 RCBC
24	Bridge at 142 feet
26	1 @ 7x6 RCBC
27	3 @ 7x6 RCBC
28	Downstream bridge at 440 feet and upstream bridge at 510 feet to span wetlands.
29	Bridge at 800 feet to span main wetlands.
30	Bridge at 770 feet to span main wetlands.

33	Bridge at 95 feet
34	Bridge at 15,705 feet (Alternatives B, J, T); 16,353 feet (Alternatives C, G, Q)
35	Bridge at 15,705 feet (Alternatives B, J, T); 15,842 feet (Alternative NA)
36	Bridge at 240 feet
38	Widen Existing Bridge
39	Widen Existing Bridge
40	Bridge at 3,456 feet
41	Bridge at 4,951 feet
42	Bridge at 4,951 feet
43	Bridge at 4,951 feet
44	Extend 3 @ 8x6 RCBC
45	Bridge at 16,353 feet (Alternatives C, G, Q); 16,43 feet (Alternative MA)
46	2 @ 6x6 RCBC

The Project Team has concurred on this date of May 30, 2017 with the Bridging Decisions and Alignment Review for the proposed project as stated above.

USACE	 DocuSigned by: Brad Shaver	NCDOT	 Jay McInnis
USEPA	 DocuSigned by: Chris Militscher	USFWS	 Gary Jordan
FHWA	 DocuSigned by: Ron Lucas	NCWRC	 Travis Wilson
SHPO	 DocuSigned by: Renee Gledhill-Earley	NCDWR	 DocuSigned by: Joanne Steenhuis
NCDCM	 DocuSigned by: Stephen Lane	WMPO	 DocuSigned by: Mike Rozlosky
NMFS	 DocuSigned by: Ken Riley		

**WILMINGTON URBAN AREA METROPOLITAN PLANNING ORGANIZATION
BOARD**

**RESOLUTION SUPPORTING ALTERNATIVE MA AND/OR ALTERNATIVE NA AS THE
WILMINGTON URBAN AREA METROPOLITAN PLANNING ORGANIZATION'S PREFERRED
ALTERNATIVES FOR THE CAPE FEAR CROSSING PROJECT**

WHEREAS, the Wilmington Urban Area Metropolitan Planning Organization provides transportation planning services for the City of Wilmington, Town of Carolina Beach, Town of Kure Beach, Town of Wrightsville Beach, Town of Belville, Town of Leland, Town of Navassa, New Hanover County, Brunswick County, Pender County, Cape Fear Public Transportation Authority and the North Carolina Board of Transportation; and

WHEREAS, Cape Fear Crossing project's purpose and need includes improvements to traffic flow and enhanced freight movements beginning in the vicinity of US 17 and the future I-140 in Brunswick County across the Cape Fear River to US 421 near the Port of Wilmington in New Hanover County; and

WHEREAS, the project is in Merger with a range of alternatives being evaluated; and

WHEREAS, Merger is a process to streamline the project development and permitting processes, agreed to by the US Army Corps of Engineers (USACE), North Carolina Department of Environmental and Natural Resources (NCDENR), Federal Highway Administration (FHWA) and North Carolina Department of Transportation (NCDOT) and supported by other stakeholder agencies and local units of government; and

WHEREAS, there are 12 detailed study alternatives currently under study for the Cape Fear Crossing project through the Merger Process; and

WHEREAS, the project is currently at Concurrence Point 2A (Bridging and Alignment Review); and

WHEREAS, the next Concurrence Point after CP2A in the Merger Process is to select the Least Environmentally Damaging Practical Alternative (Concurrence Point 3); and

WHEREAS, the North Carolina Ports Authority has indicated a height clearance requirement of 215 feet for any southern alignment to accommodate present or future shipping requirements; and

WHEREAS, the Wilmington Urban Area Metropolitan Planning Organization Board has identified their preferred alignments for the Cape Fear Crossing project.

NOW THEREFORE, be it resolved that the Board of the Wilmington Urban Area Metropolitan Planning Organization hereby supports Alternative MA and/or Alternative NA as the Wilmington Urban Area Metropolitan Planning Organization's preferred alternatives for the Cape Fear Crossing project.

ADOPTED at a regular meeting of the Wilmington Urban Area Metropolitan Planning Organization's Board on May 31, 2017.



Gary Doetsch, Chair



Mike Kozlosky, Secretary

Table 3: Comparison of Build Alternatives

Resource	B	C	F	G	J	MA	NA	P	Q	T	VA	VF
Length of Corridor (Miles)	11.1	11.3	12.0	11.3	11.2	12.3	12.2	12.0	11.5	11.4	11.8	11.8
Construction Cost (Millions \$)	760	768	425	779	675	774	763	380	745	733	511	553
Number of Interchanges	5	4	6	5	5	4	4	3	4	4	6	7
Number of Railroad Crossings	2	1	1	1	2	1	2	1	1	2	2	2
Number of Major Power Easment Crossings	2	2	4	3	2	1	1	4	2	2	4	4
Business Relocations (Number within Proposed Right of Way)	74	30	42	30	74	30	74	39	30	74	37	38
Residential Relocations (Number within Proposed Right of Way)	95	82	145	39	116	53	98	137	31	108	52	60
Total Relocations	169	112	187	69	190	83	172	176	61	182	89	98
Minority and/or Low-Income Populations Present	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Archaeological Sites (Number within Impact Area)	0	0	0	0	0	1	1	0	0	0	0	0
Historic Properties (Adverse Effect)	0	0	2	0	0	0	0	2	0	0	1	1
Section 4(f) Lands (Acres within Proposed Right of Way)	1.2	0.0	73.9	0.0	1.2	0.0	1.2	73.9	0.0	1.2	16.7	16.7
USS North Carolina Battleship (number of parcels impacted)	0	0	0	0	0	0	0	0	0	0	0	0
Wilmington Historic District (number of parcels impacted)	0	0	296	0	0	0	0	296	0	0	26	26
Sunset Park Historic District (number of parcels impacted)	0	0	22	0	0	0	0	22	0	0	22	22
Hanover Heights Historic District (number of parcels impacted)	2	0	0	0	1	0	1	0	0	1	0	0
Wilmington National Guard Armory (number of parcels impacted)	0	0	1	0	0	0	0	1	0	0	1	1
Clarendon House (number of parcels impacted)	0	0	0	0	0	0	0	0	0	0	0	0
Goodman House (number of parcels impacted)	0	0	0	0	0	0	0	0	0	0	0	0
Lake Forest Defense Housing	0	0	0	0	0	0	0	0	0	0	0	0
Wetlands (Acres within Impact Area)	107.9	111.1	74.1	62.4	54.5	72.4	66.8	58.9	49.8	42.4	140.9	155.9
Surface Waters/Ponds (Acres within Impact Area)	0.05	0.05	0.07	0.05	0.05	0.00	0.00	0.05	0.04	0.04	0.05	0.07
Floodplains (Acres within Impact)	16.6	15.8	135.0	50.4	46.2	44.2	42.5	119.1	34.0	29.8	218.2	234.3
Streams (Linear Feet within Impact)	2,528	7,944	3,466	8,539	2,456	13,170	7,439	2,125	7,748	1,667	2,098	3,510
CAMA Wetlands (Acres within Impact Area)	1.8	1.8	18.9	1.8	1.8	2.3	2.3	19.0	1.8	1.8	89.1	89.1
Large Public Trust Waters (Acres)	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4	0.4
Small Public Trust Waters (Linear Feet)	302	303	489	298	297	236	238	557	297	301	489	489
Federally-Protected Species Habitat Present	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Potential Noise Receptors*	1167	781	2717	865	1449	552	1052	2468	779	1367	1508	1799
Lands Managed for Conservation and Open Space (Acres within Impact)	0.0	0.0	5.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	76.5	76.5
Community Facilities Impacted (Number within Proposed Right of Way)												
Cemeteries	1	0	0	0	1	0	1	0	0	1	0	0
Churches	3	3	4	4	4	4	4	3	3	3	4	5
Fire Stations	0	1	0	1	0	1	0	0	1	0	0	0
Section 6f (Number within Proposed Right of Way)	0	0	3	0	0	0	0	3	0	0	2	2
Forested Land (Acres within Impact Area)	110.3	123.2	44.7	141.9	121.2	178.6	161.7	10.7	106.3	84.7	10.7	44.7
Farmland soils (Acres within Proposed Right of Way)	477.5	551.2	280.6	512.9	466.7	550.1	490.1	151.6	413.3	367.0	151.4	280.8
Parks (Number within Proposed Right of Way)	0	0	3	0	0	0	0	3	0	0	3	3
% Decrease in Travel Time Compared to 2040 No-Build	30.41	27.07	44.28	29.54	30.38	29.51	27.04	35.92	24.66	26.86	35.71	42.52

303(d) streams (listed due to sedimentation), and SA/HQW/ORW waters

Impact area equals the slope stakes limits plus 40 feet

* Noise receptors include count within 700 feet of centerline (350 feet on either side) along existing roadways and 600 feet (300 feet on either side) of new location

**Includes land surrounding the USS North Carolina Battleship site (managed by NC Natural & Cultural Resources) and Eagle Island (managed by USACE).



NORTH CAROLINA
Department of Transportation



Cape Fear Crossing Brunswick and New Hanover Counties, NC STIP Project No. U-4738

Concurrence Point 2A

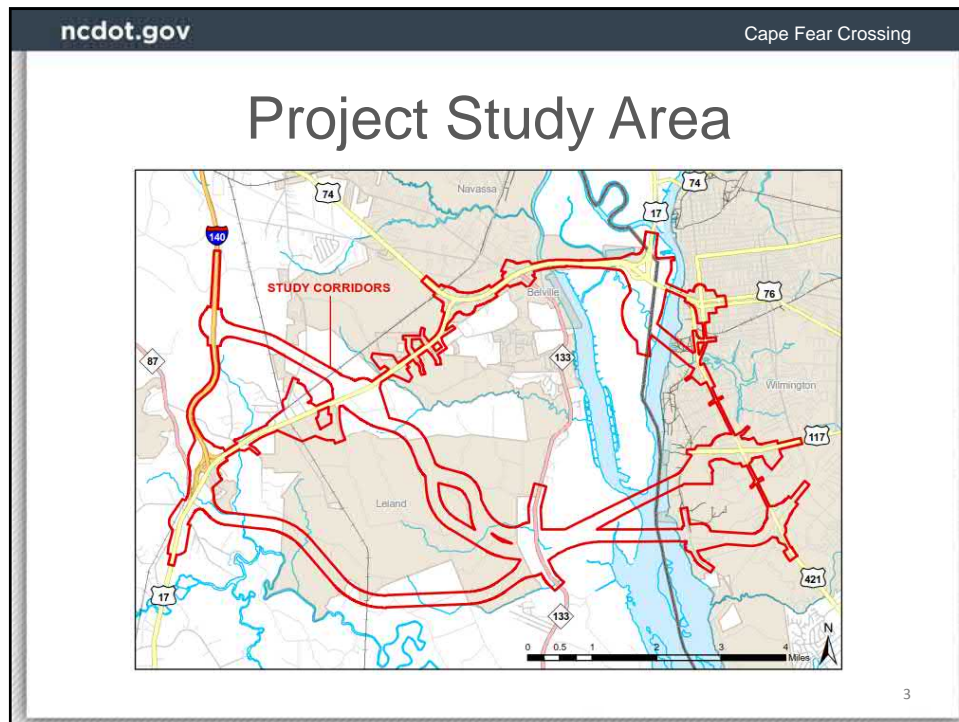
May 30, 2017

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Cape Fear Crossing

Agenda

- Introductions and Purpose of Meeting
- Project Review
 - Project Study Area, Purpose and Need, Project Status, Schedule
- Project Alternatives
- Potential Elimination of Alternatives from Further Study
- Water Resources
- Major Hydraulic Structures
- Project Impacts
- Travel Time Benefits
- Field Meeting Discussion



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Purpose and Need

- The purpose of the proposed action is to improve traffic flow and enhance freight movements beginning in the vicinity of US 17 and I-140 in Brunswick County across the Cape Fear River to US 421 near the Port of Wilmington in southern New Hanover County.

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Project Status

- Completed Tasks
 - Concurrence Point 1: Purpose and Need – December 12, 2013
 - Concurrence Point 2: Alternatives Carried Forward for Detailed Study – February 10, 2014
 - Functional Designs
 - Various Technical Studies

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Project Status

- Current Tasks
 - Coordinate with NEPA/404 Merger Team on bridging decisions (CP 2A)
 - Traffic Noise Analysis and Air Quality Analysis
 - Sea-Level Rise Analysis
 - Updates to various technical studies
 - Cost estimates (Utility, ROW, Construction)
 - Determine Effects on Cultural Resources
 - Alternative Impact Analysis

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Project Status

- Upcoming Tasks
 - Prepare Draft Environmental Impact Assessment
 - Hold Public Hearing(s)
 - Select Preferred Alternative/Least Environmentally Damaging Practicable Alternative (LEDPA) (CP 3)
 - Prepare Preliminary Design on LEDPA

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Project Status

- Upcoming Tasks (cont.)
 - Hold CP 4A Meeting—Avoidance and Minimization
 - Endangered Species Act Consultation
 - Update Technical Studies and Complete Archaeological Investigations
 - FEIS
 - ROD

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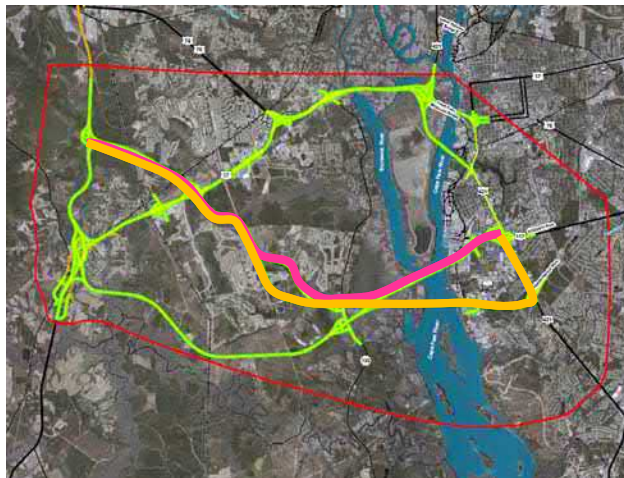
Schedule

- DEIS – Fall 2017
- Public Hearing – Spring 2018
- Select Preferred Alternative/LEDPA – Fall 2018
- FEIS – Winter 2018/2019
- ROD – Summer 2019

**This schedule is dependent upon availability of funding and subject to change.*

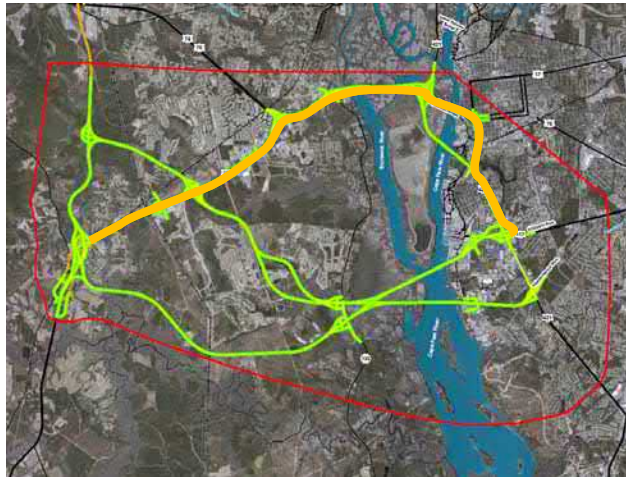
9

Alternatives B and C (new location)



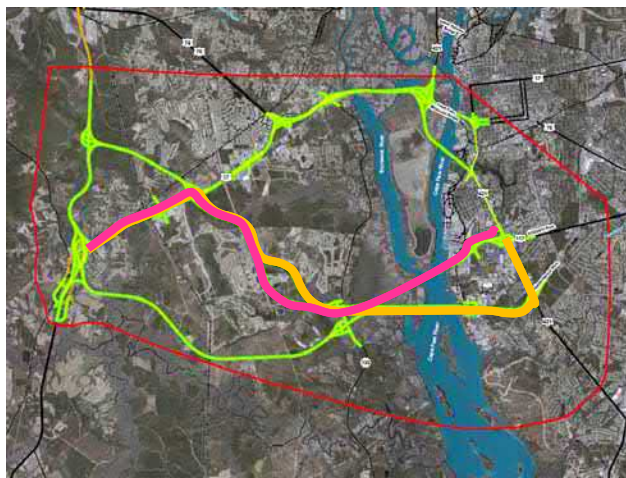
10

Alternatives F and P (Upgrade Existing)



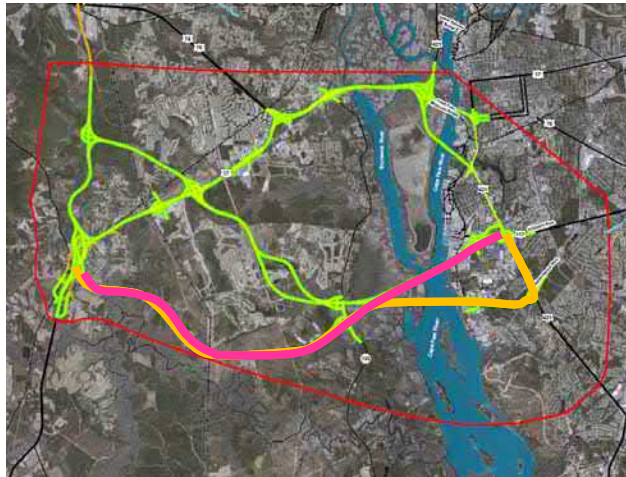
11

Alternatives G/Q and J/T (Hybrids)



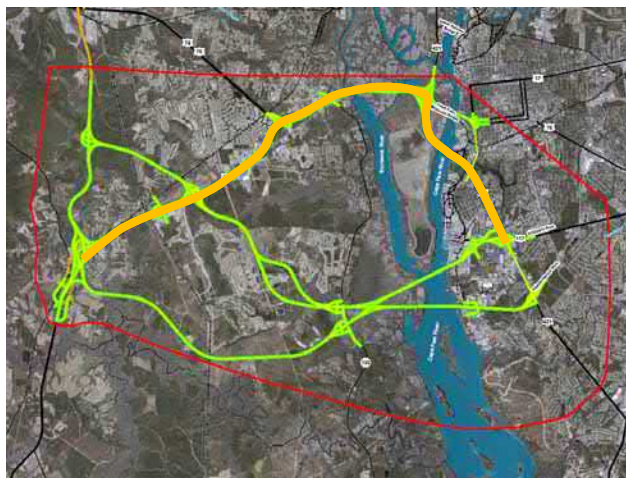
12

Alternatives M Avoidance and N Avoidance



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Alternative V (Freeway and Arterial Widening)



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Water Resources

- Jurisdictional waters in the study corridors include:
 - 70 Streams (Table 2)
 - 137 Wetlands (Table 3)

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Major Hydraulic Structures

- 42 potential major crossings – greater than 72-inch pipe

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Project Impacts

- Impacts calculated for 12 DSAs using functional designs
- Right of Way or slope stake boundaries plus 40 feet used
- Resources include:
 - Length
 - Construction Cost
 - Number of Interchanges
 - Number of railroad crossings
 - Number of Power Easements
 - Business and Residential Displacements
 - Community Resources (Schools, Churches, Cemeteries, Libraries, Fire Stations, Parks)
 - Floodplains
 - Noise Receptors
 - Terrestrial Communities
 - Hazardous Waste Sites
 - Public Trust Access
 - Natural Heritage Areas
 - Section 4(f) Properties
 - Wetlands, Streams, Ponds
 - Historic Properties
 - Archaeological Sites
 - Federally-Listed Species
 - State-Listed Species

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Alternative Impact Comparison

Table 3. Comparison of Build Alternatives

Resource	B	C	F	G	J	MA	NA	P	Q	T	VA	VF
Length of Corridor (Miles)	11.1	11.3	12.0	11.3	11.2	12.3	12.3	12.0	11.5	11.4	11.8	11.8
Construction Cost (Millions \$)	760	768	425	779	675	774	763	380	745	733	511	553
Number of Interchanges	5	4	6	5	5	4	4	3	4	4	6	7
Number of Railroad Crossings	2	1	1	1	2	1	2	1	1	1	2	2
Number of Major Power Easement Crossings	2	2	4	3	2	1	1	4	2	2	4	4
Business Relocations (Number within Proposed Right of Way)	74	30	42	30	74	30	74	39	30	74	37	38
Residential Relocations (Number within Proposed Right of Way)	95	82	145	39	116	53	98	137	31	108	52	60
Total Relocations	169	112	187	69	190	83	172	176	61	182	89	98
Minority and/or Low-Income Populations Present	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Archaeological Sites (Number within Impact Area)	0	0	0	0	0	1	1	0	0	0	0	0
Historic Properties (Adverse Effect)	0	0	2	0	0	0	0	2	0	0	1	1
Section 4(f) Lands (Acres within Proposed Right of Way)	1.2	0.0	73.9	0.0	1.2	0.0	1.2	73.9	0.0	1.2	16.7	16.7
Wetlands (Acres within Impact Area)	108.6	111.2	80.3	65.7	57.1	72.7	67.1	60.0	50.5	42.5	141.3	161.3
Surface Waters/Ponds (Acres within Impact Area)	0.05	0.05	0.07	0.05	0.05	0.00	0.00	0.05	0.04	0.04	0.05	0.07
Floodplains (Acres within Impact Area)	16.6	15.9	135.0	50.4	46.2	44.2	43.5	119.1	34.0	29.8	218.2	334.5
Streams (Linear Feet within Impact Area)	2,650	7,950	3,630	8,250	2,280	13,050	7,440	2,330	7,510	1,560	2,340	3,720
Federally-Protected Species Habitat Present	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Potential Noise Receptors*	1167	781	2717	865	1449	552	1052	2468	779	1367	1508	1799
Lands Managed for Conservation and Open Space (Acres within Impact Area)	0.0	0.0	5.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	76.5	76.5
Community Facilities Impacted (Number within Proposed Right of Way)												
Cemeteries	1	0	0	0	1	0	1	0	0	1	0	0
Churches	3	3	4	4	4	4	4	3	3	3	4	5
Fire Stations	0	1	0	1	0	1	0	0	1	0	0	0
Section 6(f) (Number within Proposed Right of Way)	0	0	3	0	0	0	0	3	0	0	2	2
Forested Land (Acres within Impact Area)	110.3	123.2	44.7	141.9	121.2	178.6	161.7	10.7	106.9	84.7	10.7	44.7
Farmland soils (Acres within Proposed Right of Way)	477.5	551.2	280.6	512.9	466.7	550.1	490.1	151.6	413.3	367.0	151.4	280.8
Parks (Number within Proposed Right of Way)	0	0	3	0	0	0	0	3	0	0	3	3

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Travel Time Benefits

Table 2. Travel Time Benefits per Alternative

Alternative	Overall Corridor Travel Time (mm:ss)	% Decrease in Travel Time Compared to 2040 No-Build	Corridor Travel Time Savings Ranking
2040 No-Build	120:31	n/a	13
Alternative B	83:52	30.41	5
Alternative C	87:54	27.07	9
Alternative F	67:09	44.28	1
Alternative G	84:55	29.54	8
Alternative J	83:54	30.38	6
Alternative M Avoidance	84:57	29.51	7
Alternative N Avoidance	87:56	27.04	10
Alternative P	77:14	35.92	3
Alternative Q	90:48	24.66	12
Alternative T	88:09	26.86	11
Alternative VA	77:29	35.71	4
Alternative VF	69:16	42.52	2

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Discussion

- Discussion
- Hydraulic Crossing Review
- Field Meeting
- CP 2A Concurrence

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STIP U-4738 Cape Fear Crossing CP2A Meeting Sign-in Sheet

May 30, 2017

NAME	AGENCY/ORGANIZATION	EMAIL
Madelyn Eam (Summer Intern)	NC DOT - Natural Environment	madelanl@ncdot.gov
Paul Atkinson	NC DOT Hydraulics	pattinson@ncdot.gov
Brook Anderson	NC DOT Hydraulics	banderson@ncdot.gov
Fritz Rohde	NOAA Fisheries	fritz.rohde@noaa.gov
Gary Jordan	US FWS	gary-jordan@fws.gov
David Leonard	NC DOT - Div 5	dbleonard@ncdot.gov
Mike Kolosky	WMFPD	mike.kolosky@wilmingtn-nc.gov
Just Weychert	NC DCM - FISHERIES	curt.weychert@madnr.gov
Stephen Lane	NC DCM	stephen.lane@ncdenr.gov
Mark Mickley	CALYX	mmickley@calyxengineers.com
Stephanie Ayers	NE Poets	stephanie.ayers@ncports.com
Ken Riley	NMFS	ken.riley@noaa.gov
Mason Herndon	NC DOT Div 3 Environmental	lmherndon@ncdot.gov
Trevor Wilson	NCCOHC	trevor.wilson@ncwillliks.org
Cathy Baittingham	DCM-Raleigh	cathy.baittingham@ncdenr.gov
Kevin Moore *	NC DOT - RDV	kmoore@ncdot.gov



STIP U-4738 Cape Fear Crossing
CP2A Meeting Sign-in Sheet

May 30, 2017

NAME	AGENCY/ORGANIZATION	EMAIL
Tracy Roberts	HNRTB	tr Roberts1@ncdot.gov
Jay McInnis	NC DOT - PDEA	Jmcinnis@ncdot.gov
Celia Foushee	AECOM	celia.foushee@aecom.com
Joanna Rocco	AECOM	joanna.rocco@aecom.com
Morgan Foster	AECOM	morgan.foster@aecom.com
Gary Doetsch	WMFO	captain.gd@bell.south.net
Neil Dean	AECOM	Neil.Dean@aecom.com
Meme Buscemi	AECOM	meme.buscemi@aecom.com
John Poliarco	ACOE - Charleston	John.J.Poliarco@USACE.ARMY.MIL
Brad Shaver	USACE - Wilmington	brad.e.shaver@usace.army.mil
JOANNE STEENHUIS	NE DUWZ	JOANNE.STEENHUIS@NEDEUR.GOV
Ron Lucas	FHWA	Ron.Lucas@dot.gov
Pat Batleman	WMFO Transp. Board	pbatleman@townofleland.com
Brenda Bozeman	Mayor, Town of Leland	bbozeman@townofleland.com
Tyson Biddle	NC DOT - NES	tysonb@ncdot.gov
Monte Matthews	USACE	Monte.L.Matthews@usace.army.mil



Cape Fear Crossing

STIP U-4738

Brunswick and New Hanover Counties

MEETING SUMMARY

Date: August 17, 2017
1:00 P.M. To 3:30 P.M.
NCDOT Century Center Building A, Structures Conference Room (C)

Project: STIP U-4738 – Cape Fear Crossing

Attendees:

Ron Lucas – FHWA
Monte Matthews - USACE
Brad Shaver – USACE Wilmington
Gary Jordan – USFWS
Mike Thorogood – USCG*
Ken Riley – NOAA, NMFS*
Renee Gledhill-Earley – HPO*
Joanne Steenhuis – NCDWR
Travis Wilson – NCWRC
Cathy Brittingham – NCDOT
Stephen Lane – NCDOT
Curt Weychert – NCDOT/Fisheries
Stephanie Ayers – NCSPA
Mason Herndon – NCDOT Division 3
Jason Dilday – NCDOT NEU
Chris Rivenbark – NCDOT NEU
Paul Atkinson – NCDOT Hydraulics

**Joined meeting via telephone*

Keith Honeycutt – NCDOT Locations & Surveys
Jason Dilday – NCDOT NES
Jay McInnis – NCDOT Project Development
Jim Harris – NCDOT Rail Division
Mark Staley – NCDOT REU
Hardee Cox – NCDOT STIP Unit
Stephen Yeung –
NCDOT Congestion Management
Mike Kozlosky – WMPO*
Pat Batleman – WMPO Transportation Board*
Brenda Bozeman – Town of Leland*
Mark Mickley – CALYX
Tracy Roberts – HNTB
Meme Buscemi – AECOM
Neil Dean – AECOM
Celia Foushee – AECOM
Joanna Rocco – AECOM

A meeting was held at 1:00 pm on Thursday, August 17, 2017 at the NCDOT Century Center Building A, Structures Design Conference Room. The purpose of this meeting was to continue discussions with the merger team regarding the potential for eliminating detailed study alternatives and to obtain concurrence on Concurrence Point (CP) 2A: Bridging Decisions and Alignment Review. A merger packet was distributed to meeting attendees, which included an email from Jay McInnis on August 3, 2017 regarding alternatives to consider eliminating, the project vicinity map, and an updated alternative comparison table.

Jay McInnis began the meeting by stating the meeting's purpose and providing a brief overview of the CP 2A meeting held in May. He then identified the alternatives recommended to be eliminated, which included Alternatives F, P, VF, VA, J, and N Avoidance. Discussion points from this conversation are summarized below:

Eliminating Alternative F and P

- Alternatives F and P would affect the highest number of homes and businesses (408 and 357 relocations, respectively) of the alternatives and will have an adverse effect on the Wilmington Historic District due to right of way impacts (approximately 296 parcels within the Historic District; 145 which are contributing). *Update: At the 8/17/17 Merger meeting, Alternatives F and P were reported as having the second and third highest number of business and residential relocations. On 8/24/2017, the project team received the Right-of-Way and Relocations Estimate, which included changes in the rankings. The decisions made at the 8/17/17 meeting are still valid because of high relocation numbers.*
- Jay McInnis showed a news clip in which several residents within the Historic District were interviewed and asked for their comments on the project. The feedback was negative and all that were interviewed opposed Alternatives F and P.
- Comments have been received from the Historic Wilmington Foundation in opposition to Alternatives F and P (see attached). The Foundation has also added the Wilmington Historic District to the 2017 Most Threatened Historic Places List because of those alternatives.
- FHWA noted that they cannot authorize federal dollars for these alternatives under Section 4(f) of the US DOT Act of 1966 because there are other feasible and prudent avoidance alternatives.
- The US Army Corps of Engineers (USACE) expressed concerns with eliminating these alternatives and requested additional documentation of the adverse effects.
 - It was noted the State Historic Preservation Office (HPO) has visited the historic resources and signed a concurrence form noting the impacts to all the historic resources. Alternatives F, P, VF, and VA have an adverse impact on the Wilmington Historic District and Alternatives F and P have an adverse effect on the USS North Carolina Battleship.
 - FHWA will draft a letter to the USACE documenting the fact they cannot select either Alternatives F and P based on adverse effects to Section 4(f) resources as well as there being other feasible and prudent avoidance alternatives. *Update: FHWA sent the letter to the USACE on October 18, 2017.*
- *Update: The USACE is in agreement to eliminate Alternatives F, P, and VF based on the letter received by FHWA. It should be noted, if the funding source for the Cape Fear Crossing project were to change to State funding, the USACE would need to revisit this decision to eliminate Alternatives F, P, and VF to assure it aligns with "reasonable" alternatives as defined under the Regulatory NEPA guidance procedures (CFR 325 Appendix B).*

- The Division of Coastal Management noted Alternatives F and P have the least open water impacts and least impacts for essential fish habitat and migratory fish species.

Eliminating Alternatives VF and VA

- NCDOT Division 3 noted they would like to continue studying Alternative VA, but would not be opposed to eliminating Alternative VF.
- FHWA noted they have the same stance on Alternatives VF and VA as previously described for Alternatives F and P due to adverse effects to Section 4(f) resources (approximately 26 parcels within the Wilmington Historic District would be impacted by right of way takes).
- It was noted there is a typo in the attached email sent to the Merger Team prior to the meeting. The second sentence states there may not be an adverse effect. There is an adverse effect which may be minimized through design refinements; however this has not been further investigated. *Update: This has been further investigated. While design refinements to avoid impacts to the South Front Apartments could likely be incorporated, impacts are likely to occur to the residential homes east of the intersection of US 421/Third Street and Greenfield Street as well as the businesses along Greenfield Street due to the lane configurations required to meet the capacity demands of the roadway network.*
- Renee Gledhill-Earley of HPO noted Section 4(f) is a prohibitive act and therefore Section 4(f) lands cannot be used if there are other feasible and prudent avoidance alternatives.
- It was noted that with Alternatives VF and VA, the -y- line impacts the Wilmington Historic District, not the mainline.
- The project team will further investigate design refinements to reduce impacts to the Wilmington Historic District.
- It was noted the CAMA wetland impacts on Alternatives VF and VA mainly come from impacts on the causeway (US 74-76-17) and on Eagle Island. The project team has determined at a conceptual level, approximately 30 acres of wetland impacts to Eagle Island can likely be avoided by bridging the area approaching the main bridge span over the Cape Fear River.
 - The Division of Coastal Management noted impacting approximately 60 acres of CAMA wetlands would likely not be allowed (i.e. a permit could probably not be issued) and that efforts to minimize CAMA wetland impacts would need to be made prior to CP 3.
 - Joanna Rocco noted the impacts provided are based upon the slope stakes plus 40 feet. There will be design refinements to minimize impacts to wetlands and prior to CP 3 (choosing a Preferred Alternative) the project team will calculate impacts based on slope stakes plus 25 feet due to the level of detail in the functional designs.
 - The Division of Coastal Management requested the project team hold a consultation with them prior to CP 3.
- There was no opposition from the Merger Team to eliminate Alternative VF.

Eliminating Other Alternatives

- It was noted Alternative J would relocate the third highest homes and businesses of any of the alternatives. *Update: At the 8/17/17 Merger meeting, Alternative J was reported as having the highest number of business and residential relocations. On 8/24/2017, the project team received the Right-of-Way and Relocations Estimate, which included changes in the rankings. The decisions made at the 8/17/17 meeting are still valid because of high relocation numbers.*
- The WMPO stated they would support dropping Alternative J; however, they did not support eliminating Alternative N Avoidance. At the April 26, 2017 WMPO Board meeting, the Board agreed to support Alternatives B, G, Q, M Avoidance, and N Avoidance. The WMPO passed a

resolution dated May 31, 2017 identifying Alternatives M Avoidance and N Avoidance as their preferred alternatives (see attached resolution).

- There was no opposition from the Merger Team to eliminate Alternative J.
- It was noted there are no direct impacts to the Spring Hill Community from any of the alternatives; however, there could be indirect impacts due to isolation from creating barriers around the community with I-140 to the west, US 17 to the south, and Alternative B to the north/east.
- It was suggested to eliminate Alternatives B and C.
 - The WMPO noted they would support eliminating Alternative C due to high stream and wetland impacts; however, based on consultation with the WMPO board, they would not support eliminating Alternative B.
- There was no opposition from the Merger Team to eliminate Alternative C.
- Mike Kozlosky noted he would revisit support of Alternatives B, G, Q, M Avoidance, and N Avoidance with the WMPO Board. *Update: After further discussion with the WMPO Board, it was agreed upon that the WMPO Board would support the Merger Team's decision to eliminate Alternatives G and Q. Alternative G is proposed to be eliminated from further consideration due to higher impacts and Alternative Q will remain as a detailed study alternative.*

The Merger Team has concurred to eliminate Alternatives F, P, VF, J, and C from further study in the Draft Environmental Impact Statement and subsequent documents. Additional follow up will occur regarding elimination of other alternatives as described above. The meeting was adjourned at 3:30 pm. *Update:*

Action Items:

- FHWA will draft a letter to the USACE documenting the fact they cannot select Alternatives F, P, VF, and VA based on adverse effects to Section 4(f) resources as well as there being other feasible and prudent avoidance alternatives. *Update: FHWA sent the letter to the USACE on October 18, 2017 (see attached letter).*
- The project team will further investigate design refinements for Alternative VA to reduce impacts to the Wilmington Historic District.
- The Division of Coastal Management requested the project team hold a consultation with them prior to CP 3 to discuss the CAMA wetland impacts in detail.
- Mike Kozlosky will revisit with the WMPO Board to determine if they continue to support Alternatives B, G, Q, M Avoidance, and N Avoidance. *Update: The WMPO Board voted to support the removal of Alternatives G and Q if the Merger Team concurred to remove one or both of these alternatives.*

Comparison of Build Alternatives

11/3/2017

Resource	B	C	F	G	J	MA	NA	P	Q	T	VA	VF
Length of Corridor (Miles)	11.1	11.3	12.0	11.3	11.2	12.3	12.2	12.0	11.5	11.4	11.8	11.8
Construction Cost (Millions \$)	760	768	425	779	675	774	763	380	745	733	511	553
Number of Interchanges	5	4	6	5	5	4	4	3	4	4	6	7
Number of Railroad Crossings	2	1	1	1	2	1	2	1	1	2	2	2
Number of Major Power Easment Crossings	2	2	4	3	2	1	1	4	2	2	4	4
Business Relocations (Number within Proposed Right of Way)	80	36	125	46	89	43	84	101	45	86	82	92
Residential Relocations (Number within Proposed Right of Way)	129	75	283	34	175	46	143	256	24	168	163	170
Total Relocations	209	111	408	80	264	89	227	357	69	254	245	262
Minority and/or Low-Income Populations Present	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Archaeological Sites (Number within Impact Area)	0	0	0	0	0	1	1	0	0	0	0	0
Historic Properties (Adverse Effect)	0	0	2	0	0	0	0	2	0	0	1	1
Section 4(f) Lands (Acres within Proposed Right of Way)	1.2	0.0	73.9	0.0	1.2	0.0	1.2	73.9	0.0	1.2	16.7	16.7
USS North Carolina Battleship (number of parcels impacted)	0	0	0	0	0	0	0	0	0	0	0	0
Wilmington Historic District (number of parcels impacted)	0	0	296	0	0	0	0	296	0	0	26	26
Sunset Park Historic District (number of parcels impacted)	0	0	22	0	0	0	0	22	0	0	22	22
Hanover Heights Historic District (number of parcels impacted)	2	0	0	0	1	0	1	0	0	1	0	0
Wilmington National Guard Armory (number of parcels impacted)	0	0	1	0	0	0	0	1	0	0	1	1
Clarendon House (number of parcels impacted)	0	0	0	0	0	0	0	0	0	0	0	0
Goodman House (number of parcels impacted)	0	0	0	0	0	0	0	0	0	0	0	0
Lake Forest Defense Housing	0	0	0	0	0	0	0	0	0	0	0	0
Wetlands (Acres within Impact Area)	107.9	111.1	74.1	62.4	54.5	72.4	66.8	58.9	49.8	42.4	140.9	155.9
Surface Waters/Ponds (Acres within Impact Area)	0.05	0.05	0.07	0.05	0.05	0.00	0.00	0.05	0.04	0.04	0.05	0.07
Floodplains (Acres within Impact)	16.6	15.8	135.0	50.4	46.2	44.2	42.5	119.1	34.0	29.8	218.2	234.3
Streams (Linear Feet within Impact)	2,528	7,944	3,466	8,539	2,456	13,170	7,439	2,125	7,748	1,667	2,098	3,510
CAMA Wetlands (Acres within Impact Area)	1.8	1.8	18.9	1.8	1.8	2.3	2.3	19.0	1.8	1.8	89.1	89.1
Large Public Trust Waters (Acres)	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4	0.4
Small Public Trust Waters (Linear Feet)	302	303	489	298	297	236	238	557	297	301	489	489
Federally-Protected Species Habitat Present	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Potential Noise Receptors*	1167	781	2717	865	1449	552	1052	2468	779	1367	1508	1799
Lands Managed for Conservation and Open Space (Acres within Impact)	0.0	0.0	5.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	76.5	76.5
Community Facilities Impacted (Number within Proposed Right of Way)												
Cemeteries	1	0	0	0	1	0	1	0	0	1	0	0
Churches	3	3	4	4	4	4	4	3	3	3	4	5
Fire Stations	0	1	0	1	0	1	0	0	1	0	0	0
Section 6f (Number within Proposed Right of Way)	0	0	3	0	0	0	0	3	0	0	2	2
Forested Land (Acres within Impact Area)	110.3	123.2	44.7	141.9	121.2	178.6	161.7	10.7	106.3	84.7	10.7	44.7
Farmland soils (Acres within Proposed Right of Way)	477.5	551.2	280.6	512.9	466.7	550.1	490.1	151.6	413.3	367.0	151.4	280.8
Parks (Number within Proposed Right of Way)	0	0	3	0	0	0	0	3	0	0	3	3
% Decrease in Travel Time Compared to 2040 No-Build	30.41	27.07	44.28	29.54	30.38	29.51	27.04	35.92	24.66	26.86	35.71	42.52

303(d) streams (listed due to sedimentation), and SA/HQW/ORW waters

Impact area equals the slope stakes limits plus 40 feet

* Noise receptors include count within 700 feet of centerline (350 feet on either side) along existing roadways and 600 feet (300 feet on either side) of new location

**Includes land surrounding the USS North Carolina Battleship site (managed by NC Natural & Cultural Resources) and Eagle Island (managed by USACE).



Preservation Leadership Since 1966

April 20, 2017

Wilmington Urban Area Metropolitan Planning Organization
P.O. Box 1810
Wilmington, North Carolina 28402

Dear Board Members of the Wilmington Metropolitan Planning Organization:

Thank you for your service on the board of the very important Wilmington Metropolitan Planning Organization (WMPO). I write on behalf of the Historic Wilmington Foundation (HWF) regarding the North Carolina Department of Transportation (NCDOT) Cape Fear Crossing Study currently underway to make an urgent request in advance of both the WMPO work session on April 26 and the CP2 meeting planned for late May.

The HWF understands the critical need for, and the economic importance of, a new bridge across the Cape Fear River (the "Cape Fear Crossing") to carry the ever-growing volume of vehicles between New Hanover and Brunswick Counties as well as commercial and tourism through-traffic. We fully support the great work the WMPO is doing to make the much-needed Cape Fear Crossing a reality.

However, for the reasons set out below, we oppose any new or expanded crossing at or near the existing Cape Fear Memorial Bridge. We respectfully ask that, at the upcoming CP2 Meeting, the WMPO requires that these alternatives (Alternatives F/P and V in the NCDOT/NEPA Study, and referred to herein as "Memorial Bridge Alternatives") be removed from consideration.

Wilmington's downtown is a densely built, growing, tightly knit urban center with a concentration of culturally significant nineteenth century historic structures built on an eighteenth century street grid. The fact that it is bounded on one side by the Cape Fear River further complicates and limits the City's traffic movement options. This historic core is the business, government and cultural center for Wilmington and New Hanover County as well as the Cape Fear region. It contains Wilmington's most significant historic structures, tourist attractions, and a concentration of businesses and neighborhoods that add significantly to the tax base and the region's quality of life. In fact, our urban center contains eight National Register districts with more than 6000 homes and buildings. It is an important economic driver for the entire region. Bridge traffic (much of which is through traffic bound for the Port, beaches, and large employers outside downtown) should not be routed through Wilmington's historic core.

The Memorial Bridge Alternatives will bring ever growing traffic, pollution and noise into downtown Wilmington's already very congested core. They also require significant widening of roads and huge on/off ramps. As a result, these alternatives will do irreparable damage to National Register and locally designated historic districts, which are essential to New Hanover County's and Wilmington's tourist industry, economy, heritage and brand. In fact, these assets are a part of the region's identity.

In addition, the Memorial Bridge Alternatives will turn Dawson and Wooster Streets into barriers that further separate the city north and south and create social and economic divisions in our community. These barriers will isolate and damage established neighborhoods and important economic re-development on Wilmington's Southside.

We are advised that best practices in transportation planning call for routing through-traffic around dense urban centers using by-passes and ring roads. This guiding principle and the facts dictate that a crossing further south nearer the Port, that by-passes downtown, is a better solution for our region. Such a southerly crossing would move traffic to and from the Port, beaches and Wilmington's largest employers more directly and efficiently, without doing irreversible damage to New Hanover County's and Wilmington's economy, history, culture and social fabric. For these reasons, we respectfully urge that the Memorial Bridge Alternatives be removed from consideration and that NCDOT's Least Environmentally Damaging Practicable Alternative study focus solely on the southern alternatives.

Thank you for considering our concerns and request.

Respectfully,



Walker Abney,
President, Board of Trustees

Cc: Secretary Susi Hamilton, Department of Natural and Cultural Resources
Renee Gledhill-Earley, Environmental Review Coordinator, State Historic Preservation Office
Wilmington Port Authority
Wilmington City Council
New Hanover County Commissioners

From: McInnis, Jay
To: [Brad Shaver \(brad.e.shaver@usace.army.mil\)](mailto:brad.e.shaver@usace.army.mil); Ron.Lucas@dot.gov; Militscher.chris@epa.gov; [Steenhuis, Joanne; Gledhill-earley, Renee; Wilson, Travis W.; Gary Jordan \(gary_jordan@fws.gov\); Lane, Stephen; Ken.Riley@noaa.gov; Michael.r.thorogood@uscg.mil](mailto:Steenhuis.Joanne;Gledhill-earley.Renee;Wilson.Travis.W.;Gary.Jordan(gary_jordan@fws.gov);Lane.Stephen;Ken.Riley@noaa.gov;Michael.r.thorogood@uscg.mil)
Cc: [Roberts, Tracy; Rocco, Joanna; Foushee, Celia](mailto:Roberts.Tracy;Rocco.Joanna;Foushee.Celia)
Subject: U-4738 Detailed Study Alternatives
Date: Thursday, August 03, 2017 4:04:07 PM
Attachments: [image001.png](#)
[170817_U-4738_CP2A_FollowUp_Meeting_Packet.pdf](#)

Merger Team,

You should have gotten a notice yesterday about a merger team meeting on August 17th for U-4738 (Proposed Cape Fear Crossing). The purpose of this meeting is to continue discussions regarding the potential for dropping some of the detailed study alternatives we had during the office portion of our May 30th merger team meeting. We discussed this, but did not reach any conclusions regarding alternatives that could be dropped. Attached is a figure showing the alternatives for the project and an updated comparison table.

The CP 2A meeting is a good time to reexamine the alternatives selected at CP 2 because this is the first time we have both detailed environmental information and detailed design information. If there are alternatives with very high impacts that will probably not be selected for the project, these alternatives can be dropped from consideration and the reasons for doing so will be documented in the DEIS. This will save additional time and effort on alternatives that aren't going to happen. In reviewing the impacts of the various alternatives, I believe we have enough information to know that six of our 12 alternatives should not be carried forward and can be dropped from consideration.

I believe it is appropriate to drop Alternatives F, P, VF, VA, J and NA at this time.

Although Alternative F would have the lowest travel time of all the alternatives, this alternative would affect the second highest number of homes and businesses of any of the alternatives, including homes and businesses within the Wilmington Historic District. The alternative would have an adverse effect on the USS North Carolina and the Wilmington Historic District. The alternative would also affect 296 parcels within the District. This alternative has the fifth highest stream impacts of any of the alternatives. Also, there are several other alternatives with less wetland and stream impacts that will not relocate as many homes and businesses than Alternative F.

Alternative P has one of the lower travel times but would affect a large number of homes and businesses, including homes and businesses within the Wilmington Historic District. This alternative would have an adverse effect on the USS North Carolina and the Wilmington Historic District, affecting 296 parcels in the District. There are also other alternatives that would affect less wetlands and streams that would relocate fewer homes and businesses.

Even though Alternatives VF and VA have the second and fourth lowest travel times respectively, they have the highest wetland impacts of any of the alternatives. These alternatives would affect 26 parcels within the Wilmington Historic District, although they may not have an adverse effect. There are other alternatives that would affect less wetlands and streams and would relocate fewer homes

and businesses.

Alternative J would relocate the most homes and businesses of any of the alternatives. There are two other alternatives which would affect less wetlands than Alternative J.

Alternative NA would affect the fifth largest number of homes and businesses and has fairly high stream impacts, but ranks 10th in travel time savings.

Section 4(f) is an issue with several of these alternatives, as well.

Please let me know if you have any questions or need additional information prior to the August 17th meeting.

Thanks,

Jay McInnis, PE
Project Engineer
Project Development and Environmental Analysis Unit
North Carolina Department of Transportation

919 707 6029 office
jmcinnis@ncdot.gov

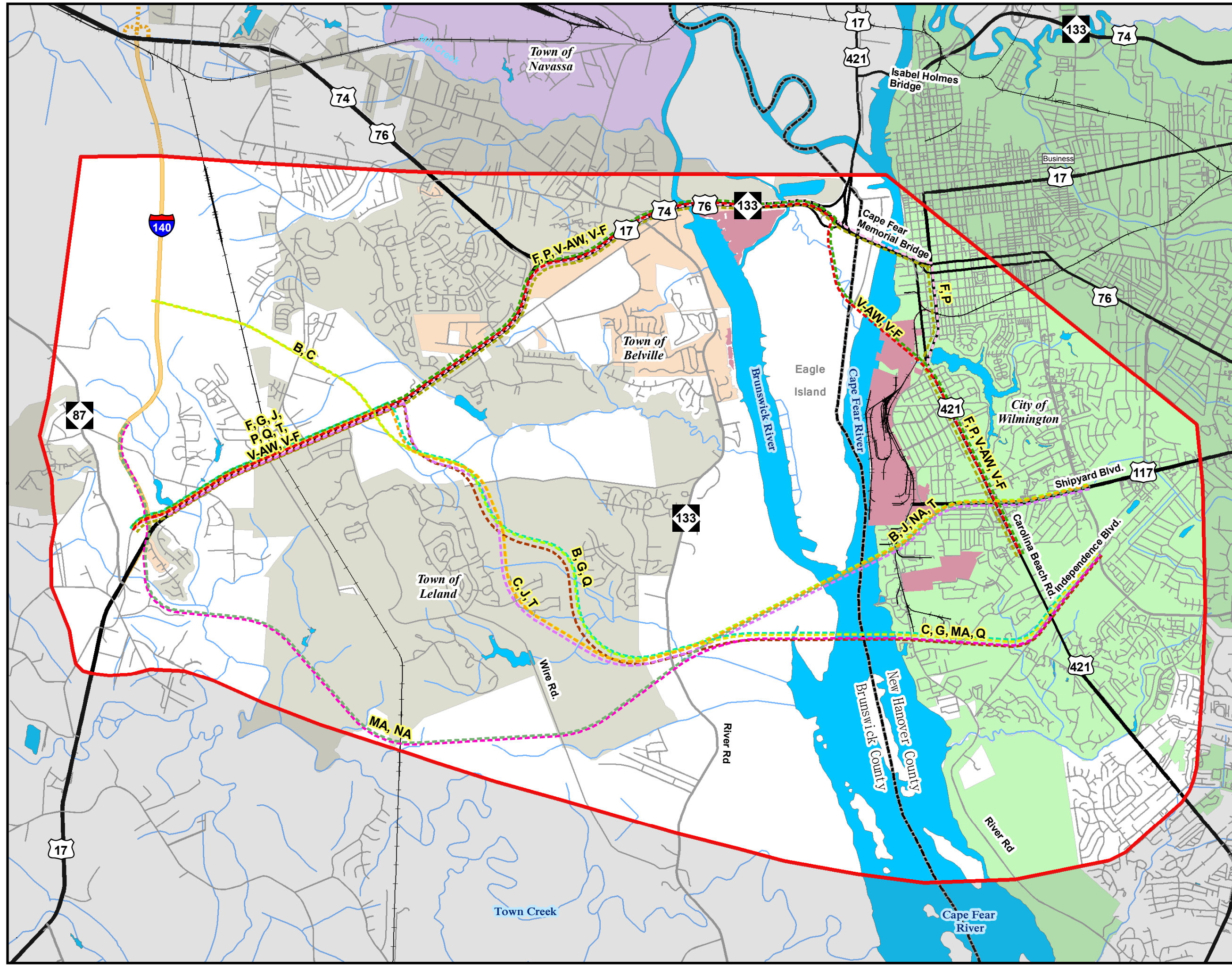
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CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

Concurrence Point 2A
































Figure 1: Project Study Area

Legend

 Project Study Area	 Alternative B
 Interstate	 Alternative C
 US Highway	 Alternative F
 NC Highway	 Alternative G
 Local Road	 Alternative J
 Railroad	 Alternative MA
 Future Wilmington Bypass (I-140)	 Alternative NA
 Water	 Alternative P
 Belville	 Alternative Q
 Leland	 Alternative T
 Navassa	 Alternative V-AW
 Wilmington	 Alternative V-F
 County Boundary	
 Port of Wilmington	



Virginia
Tennessee
North Carolina
South Carolina
Georgia



0 0.5 1 2
Miles

Date: March 2017
This map is for reference only.
Sources: ESRI, CGIA, NCDOT, and AECOM.

**WILMINGTON URBAN AREA METROPOLITAN PLANNING ORGANIZATION
BOARD**

**RESOLUTION SUPPORTING ALTERNATIVE MA AND/OR ALTERNATIVE NA AS THE
WILMINGTON URBAN AREA METROPOLITAN PLANNING ORGANIZATION'S PREFERRED
ALTERNATIVES FOR THE CAPE FEAR CROSSING PROJECT**

WHEREAS, the Wilmington Urban Area Metropolitan Planning Organization provides transportation planning services for the City of Wilmington, Town of Carolina Beach, Town of Kure Beach, Town of Wrightsville Beach, Town of Belville, Town of Leland, Town of Navassa, New Hanover County, Brunswick County, Pender County, Cape Fear Public Transportation Authority and the North Carolina Board of Transportation; and

WHEREAS, Cape Fear Crossing project's purpose and need includes improvements to traffic flow and enhanced freight movements beginning in the vicinity of US 17 and the future I-140 in Brunswick County across the Cape Fear River to US 421 near the Port of Wilmington in New Hanover County; and

WHEREAS, the project is in Merger with a range of alternatives being evaluated; and

WHEREAS, Merger is a process to streamline the project development and permitting processes, agreed to by the US Army Corps of Engineers (USACE), North Carolina Department of Environmental and Natural Resources (NCDENR), Federal Highway Administration (FHWA) and North Carolina Department of Transportation (NCDOT) and supported by other stakeholder agencies and local units of government; and

WHEREAS, there are 12 detailed study alternatives currently under study for the Cape Fear Crossing project through the Merger Process; and

WHEREAS, the project is currently at Concurrence Point 2A (Bridging and Alignment Review); and

WHEREAS, the next Concurrence Point after CP2A in the Merger Process is to select the Least Environmentally Damaging Practical Alternative (Concurrence Point 3); and

WHEREAS, the North Carolina Ports Authority has indicated a height clearance requirement of 215 feet for any southern alignment to accommodate present or future shipping requirements; and

WHEREAS, the Wilmington Urban Area Metropolitan Planning Organization Board has identified their preferred alignments for the Cape Fear Crossing project.

NOW THEREFORE, be it resolved that the Board of the Wilmington Urban Area Metropolitan Planning Organization hereby supports Alternative MA and/or Alternative NA as the Wilmington Urban Area Metropolitan Planning Organization's preferred alternatives for the Cape Fear Crossing project.

ADOPTED at a regular meeting of the Wilmington Urban Area Metropolitan Planning Organization's Board on May 31, 2017.



Gary Doetsch, Chair



Mike Kozlosky, Secretary



U.S. Department
of Transportation
**Federal Highway
Administration**

North Carolina Division

October 18, 2017

310 New Bern Avenue, Suite 410
Raleigh, NC 27601
(919) 856-4346
(919) 747-7030
<http://www.fhwa.dot.gov/ncdiv/>

In Reply Refer To:
HDA-NC

Mr. Brad Shaver
U.S. Army Corps of Engineers
Wilmington Regulatory Field Office
69 Darlington Ave.
Wilmington, NC 28403-1343

Dear Mr. Shaver:

My staff reviewed the August 17, 2017, merger team handouts and the May 24, 2017, Section 106 concurrence forms for the Cape Fear Crossing project (STIP Project U-4738). The merger team handouts consisted of a comparison of build alternatives in a table format, and the Section 106 concurrence forms documented impacts to historic resources for the Cape Fear Crossing study alternatives.

The table identifies eight alternatives with right-of-way impacts to resources protected under Section 4(f) of the USDOT Act of 1966. The Section 106 concurrence forms identify four alternatives that have an adverse impact to a Section 4(f) resource in which the acquisition of right-of-way from the resource is required.

The Section 4(f) law as described in 23 CFR 774.3 states that "The Administration may not approve the use, as defined in 23 CFR 774.17, of Section 4(f) property unless a determination is made under the following:

(a) The Administration determines that:

- (1) There is no feasible and prudent avoidance alternative as defined in 23 CFR 774.17 to the use of land from the property; and
- (2) The action includes all possible planning as defined in 23 CFR 774.17, to minimize harm to the property resulting from such use; or

(b) The administration determines that the use of the property, including any measure(s) to minimize harm (such as any avoidance, minimization, mitigation, or enhancement measures) committed to by the applicant, will have a *de minimis* impact, as defined in 23 CFR 774.17, on the property."

The Federal Highway Administration (FHWA) policy paper states in section 3.3.1 that a *de minimis* impact determination can be made if there is a Section 106 finding of no adverse effect or no effect on the historic property.

The following alternatives have right of way impacts to a Section 4(f) resource, the Wilmington Historic District, and have been determined to have an adverse impact to the district:

- Alternative F
- Alternative P
- Alternative VA
- Alternative VF

FHWA has determined that Alternatives F, P, VA, and VF of the Cape Fear study project cannot be approved by the USDOT. FHWA has determined that there is a “use”, as defined in 23 CFR 774.17, of the Wilmington Historic District for these alternatives, and FHWA has determined that there are prudent and feasible alternatives present that avoid the use of the Wilmington Historic District that have been selected for detailed study as defined in 23 CFR 774.17.

FHWA understands that North Carolina Department of Transportation (NCDOT) and the Corps of Engineers is interested in continuing to study at least one of these four alternatives (Alternative VA) in detail. FHWA is willing to concur on continuing to study Alternative VA, with the understanding that NCDOT will seek to reduce impacts of this alternative on the Wilmington Historic District. If after further design work, the alternative still has an adverse effect and requires the use of land from the Wilmington Historic District, FHWA will not be able to select that alternative for the project.

Sincerely,

A handwritten signature in blue ink, appearing to read "John F. Sullivan, III", with a long horizontal flourish extending to the right.

For John F. Sullivan, III, P.E.
Division Administrator

MEMORANDUM

To: Project File

From: Celia Miars

Date: August 7, 2018

Subject: **STIP U-4738, Cape Fear Crossing
Tolling discussion**

Meeting Attendees

George Hoops – FWHA	John Conforti – NCDOT Project Management Unit
Ron Lucas – FHWA	Tracy Roberts - HNTB
Kristina Solberg – FHWA	Celia Miars – AECOM
Mike Kozlosky – WMPO	Joanna Rocco – AECOM

At the request of the Wilmington MPO (WMPO), the project team held a conference call with FHWA on July 19, 2018 to discuss consideration for tolling the Cape Fear Crossing project. The WMPO identifies the project as a toll facility in the 2040 Metropolitan Transportation Plan (MTP), however, the project has not been analyzed as a toll facility in the Draft Environmental Impact Statement (DEIS) currently being prepared. The MTP includes tolling as a financial strategy and is being scored under P 5.0 as a toll facility. The WMPO requested guidance from FHWA on how to consider tolling in the DEIS so that tolling is not precluded in the future.

The main discussion items and/or decisions from the meeting are below.

- WMPO has requested that the Turnpike Authority evaluate the feasibility of tolling the Cape Fear Crossing project. They are currently waiting on the WMPO's updated travel demand model to be completed (anticipated in August 2018).
- FHWA noted that if the purpose of tolling is a financial strategy to help fund the project, then the project team can include it in the DEIS as such, as opposed to studying it as an additional alternative. The Final Environmental Impact Statement (FEIS) will discuss any changes made by tolling the preferred alternative selected at Concurrence Point 3, including changes in impacts to jurisdictional resources and potential impacts on Environmental Justice populations.
- If electronic toll collection is used as opposed to cash collection, any expansion of the project footprint at the toll collection points would be small and would likely remain within the operational right of way (i.e. the area within the right of way that is maintained by mowing). Also, jurisdictional impacts would be unlikely to increase since impacts are calculated using 40 feet out from slope stakes. Considering these factors, tolling should not be a concern for the US Army Corps of Engineers.

- Public outreach materials should include tolling as a possibility.
- It was agreed by the attendees on the call to include a separate section in the DEIS discussing tolling as a potential means for financing the project, as included in the MTP. The DEIS can continue to include in its analysis the six non-tolled alternatives currently under study.
- If, after selection of the Preferred Alternative/LEDPA, tolling is added to the project, this will be included in the FEIS and any changes in impacts will be discussed. Coordination with the Merger Team may be needed depending on the type and extent of the impacts.